88734

Access DB# _____

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Molly Ceperley Examiner #: 59757 Date: 03/11/03
Art Unit: 1641 Phone Number 30 8-4239 Serial Number: PCT/US02/05808 10/049,164
Mail Box and Bldg/Room Location: _____ Results Format Preferred (circle): PAPER DISK E-MAIL
↳ 7E12 ↳ 8D15

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Activity Based Probe Analysis

Inventors (please provide full names): ACTIVX BIOSCIENCES, INC.
Matthew P. Patricelli

Earliest Priority Filing Date: 02/05/01

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

1) Please search for each of the compound fragments circled in claim 11 in combination with each of the terms fluoresc?, rhodamine (see claim 10) and the dyes of claim 28.
2) Please search for the concept of analyzing protein mixtures using fluorescence detection (see claim 1). This concept might also be phrased as analyzing a proteome (claim 14) using a probe and/or combinatorial chemical library (claim 26).

Terms: proteome, combinatorial library (claim 26), protein analysis, probe, fluoresc?, electrophore? (claim 2), rhodamine (claim 31), carboxytetramethylrhodamine, 6-carboxytetramethylrhodamine (claim 32), xanthene, naphthylamine, coumarin, cyanine, ~~metal~~ metal chelate, BODIPY, lanthanide cryptate; erbium, terbium or ruthenium chelates (claim 28)

POINT OF CONTACT:
PAUL SCHULWITZ
TECHNICAL INFO. SPECIALIST
CM1 6B06 TEL. (703) 305-1954

****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher:	NA Sequence (#)		STN	802.25
Searcher Phone #:	AA Sequence (#)		Dialog	
Searcher Location:	Structure (#)	2	Questel/Orbit	
Date Searcher Picked Up:	3/17	Bibliographic	Dr.Link	
Date Completed:	3/18	Litigation	Lexis/Nexis	
Searcher Prep & Review Time:	20	Fulltext	X	Sequence Systems
Clerical Prep Time:		Patent Family		WWW/Internet
Online Time:	63	Other		Other (specify)

PTO-1590 (8-01)

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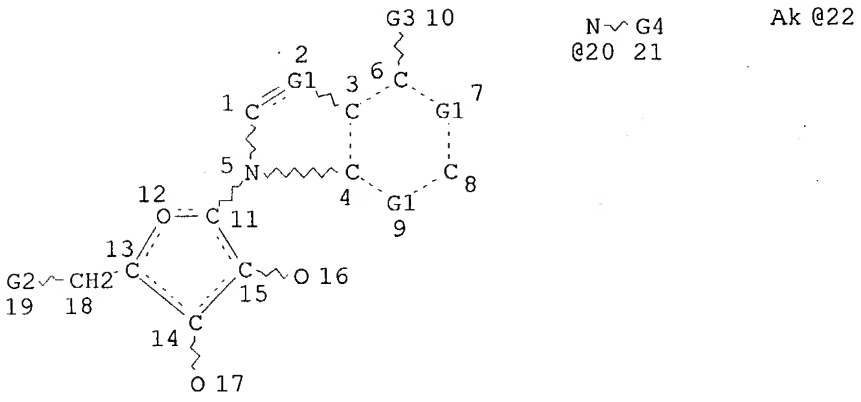
L1 STR



Considered
04/10/03
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VAR G2=CH2/S/O/20
VAR G3=H/NH2
VAR G4=H/22
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CONNECT IS E3 RC AT 13
CONNECT IS E3 RC AT 14
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CONNECT IS E1 RC AT 22
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GGCAT IS LOC AT 22
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 22

STEREO ATTRIBUTES: NONE
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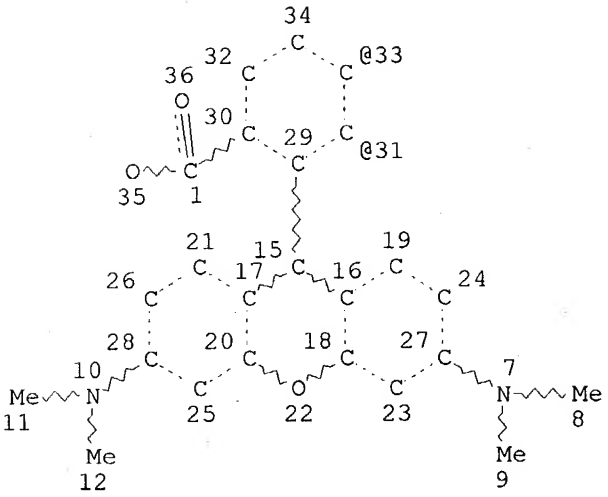
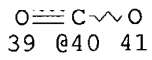
L12 STR





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NODE ATTRIBUTES:
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 32

STEREO ATTRIBUTES: NONE
L14 11 SEA FILE=REGISTRY SSS FUL L12
L18 15654 SEA FILE=HCAPLUS ABB=ON PLU=ON (XANTHENE OR NAPHTHYLAMINE OR COUMARIN OR CYANINE OR METAL CHELATE OR BODIPY OR LANTHANIDE CRYPT? OR ERBIUM OR TERBIUM OR RUTHENIUM OR RHUTHENIUM)(S)DYE
L20 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L2 AND (L14 OR RHODAMIN?) AND FLUORESC? AND L18

=> d ibib abs hitstr hitind 1-8

L20 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:615942 HCAPLUS
DOCUMENT NUMBER: 137:165832
TITLE: Activity based probe analysis
INVENTOR(S): Patricelli, Matthew P.
PATENT ASSIGNEE(S): Activx Biosciences, Inc., USA
SOURCE: PCT Int. Appl., 62 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002063271	A2	20020815	WO 2002-US3808	20020205
WO 2002063271	C1	20021024		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2001-266687P P 20010205 this application

OTHER SOURCE(S): MARPAT 137:165832

AB The invention concerns methods and compns. are described for analyzing complex protein mixts. using **fluorescent** activity-based probes. In particular, probes that specifically react with and bind to the active form of one or more target proteins are employed. **Fluorescent** signals obtained from the labeled active target proteins can be related to the presence or amt. of active members of the desired target protein class. The methods and compns. described herein can be used, for example, to provide diagnostic information concerning pathogenic states, in identifying proteins that may act as therapeutic targets, and in drug discovery.

IT **446850-50-6P 446850-53-9P 446850-55-1DP,** reaction with **rhodamine** green **446850-58-4P 446850-61-9P 446850-64-2P 446850-67-5P 446850-69-7DP,** reaction with **rhodamine** green **446850-71-1P 446850-73-3P 446850-76-6P 446850-79-9P 446850-81-3P**
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(activity based probe anal.)

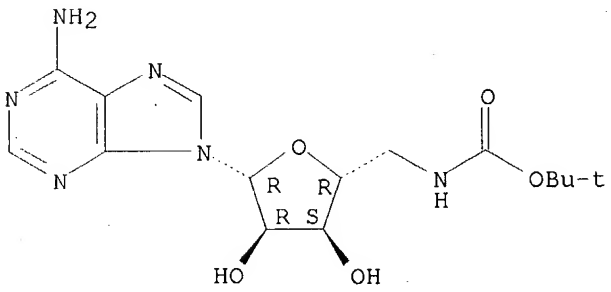
RN 446850-50-6 HCAPLUS

CN Adenosine, 5'-deoxy-5'-[[(1,1-dimethylethoxy)carbonyl]amino]-, 2'(or 3')-[(2-aminoethyl)carbamate] (9CI) (CA INDEX NAME)

CM 1

CRN 446850-49-3
CMF C15 H22 N6 O5

Absolute stereochemistry.



CM 2

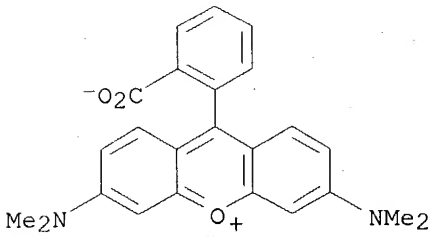
CRN 109-58-0
CMF C3 H8 N2 O2

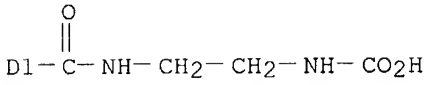
$H_2N-CH_2-CH_2-NH-CO_2H$

RN 446850-53-9 HCAPLUS
CN Adenosine, 5'-amino-5'-deoxy-, monoester with 9-[2-carboxy-4(or 5)-[[[2-(carboxyamino)ethyl]amino]carbonyl]phenyl]-3,6-bis(dimethylamino)xanthylium inner salt (9CI) (CA INDEX NAME)

CM 1

CRN 446850-52-8
CMF C28 H28 N4 O6
CCI IDS





CM 2

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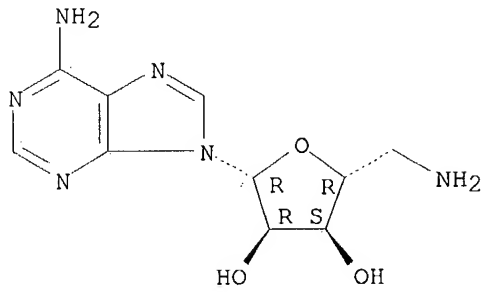
CMF C10 H14 N6 O3

Absolute stereochemistry.



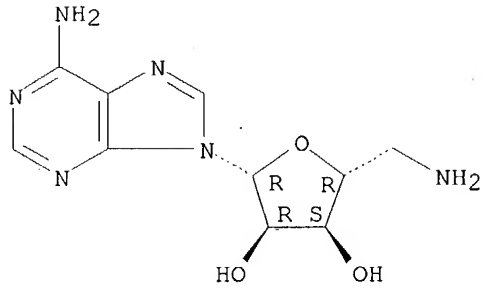
RN 446850-55-1 HCAPLUS
CN Adenosine, 5'-amino-5'-deoxy-, 2'(or 3')-[(2-aminoethyl)carbamate] (9CI)

(CA INDEX NAME)

CM 1

CRN 14365-44-7
CMF C10 H14 N6 O3

Absolute stereochemistry.



CM 2

CRN 109-58-0
CMF C3 H8 N2 O2

$H_2N-CH_2-CH_2-NH-CO_2H$

RN 446850-58-4 HCAPLUS
CN Adenosine, 5'-deoxy-5'-[[4-(fluorosulfonyl)benzoyl]amino]-, 2'(or 3')-[[2-[[3(or 4)-[3,6-bis(dimethylamino)xanthylium-9-yl]-4(or 3)-carboxyphenyl]carbonyl]amino]ethyl]carbamate], inner salt (9CI) (CA INDEX NAME)

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CRN 446850-57-3
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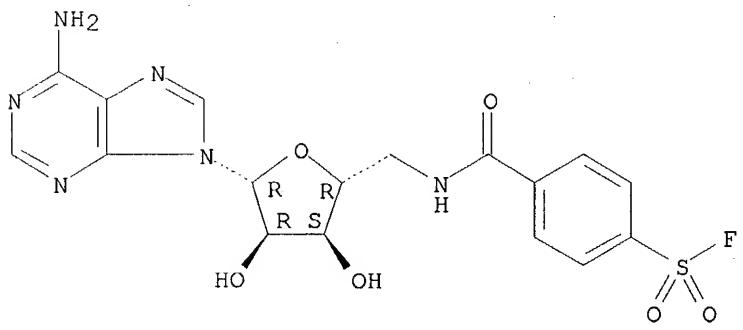
Absolute stereochemistry.



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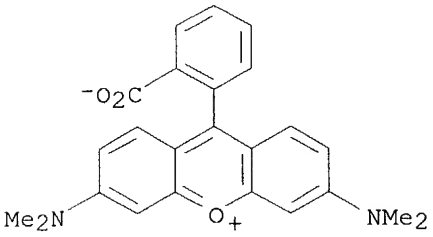
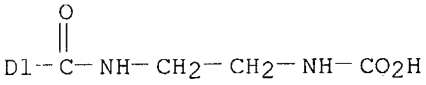
CCI IDS





RN 446850-61-9 HCAPLUS
CN Adenosine, 5'-deoxy-5'-[[4-(ethenylsulfonyl)benzoyl]amino]-, 2'(or 3')-[[2-[[[3(or 4)-[3,6-bis(dimethylamino)xanthylium-9-yl]-4(or 3)-carboxyphenyl]carbonyl]amino]ethyl]carbamate], inner salt (9CI) (CA INDEX NAME)

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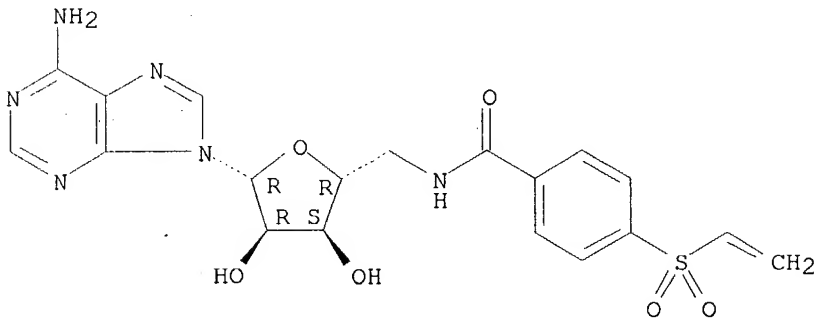
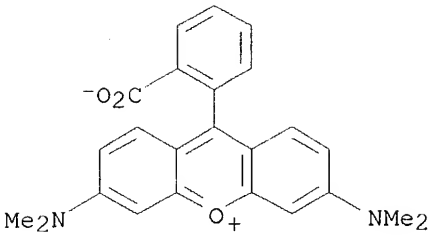
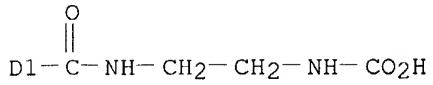
Absolute stereochemistry.



CM 2

CRN 446850-52-8
CMF C28 H28 N4 O6
CCI IDS



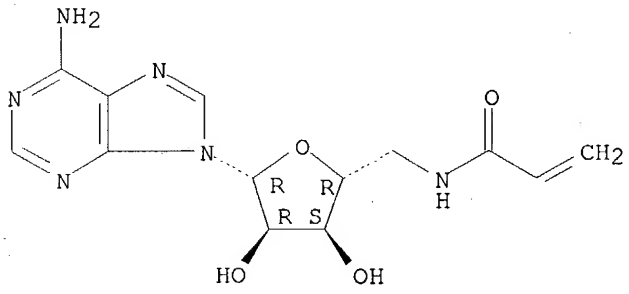


RN 446850-64-2 HCAPLUS
CN Adenosine, 5'-deoxy-5'-[(1-oxo-2-propenyl)amino]-, 2'(or 3')-[[2-[[[3(or 4)-[3,6-bis(dimethylamino)xanthylium-9-yl]-4(or 3)-carboxyphenyl]carbonyl]amino]ethyl]carbamate], inner salt (9CI) (CA INDEX NAME)

CM 1

CRN 446850-63-1
CMF C13 H16 N6 O4

Absolute stereochemistry.



CM 2

CRN 446850-52-8
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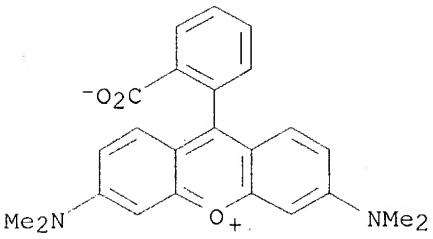
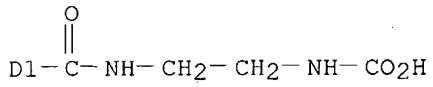
CCI IDS



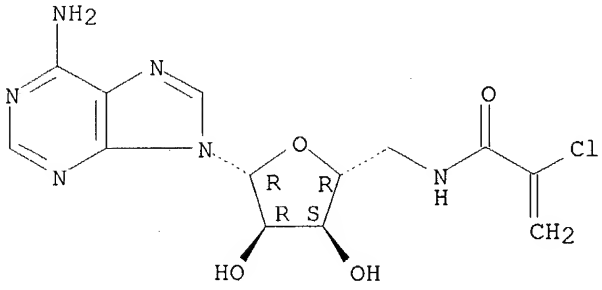


RN 446850-67-5 HCAPLUS
CN Adenosine, 5'-[(2-chloro-1-oxo-2-propenyl)amino]-5'-deoxy-, 2'(or 3')-[[2-[[[3(or 4)-[3,6-bis(dimethylamino)xanthylium-9-yl]-4(or 3)-carboxyphenyl]carbonyl]amino]ethyl]carbamate], inner salt (9CI) (CA INDEX NAME)

CM 1

CRN 446850-66-4
CMF C13 H15 Cl N6 O4

Absolute stereochemistry.



CM 2

CRN 446850-52-8
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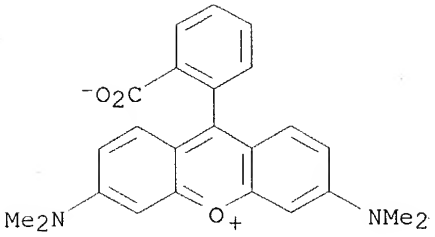
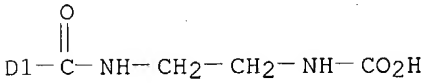
CCI IDS



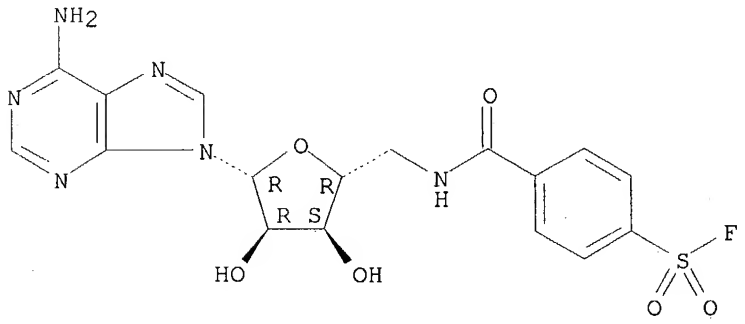


RN 446850-69-7 HCAPLUS
CN Adenosine, 5'-deoxy-5'-[[4-(fluorosulfonyl)benzoyl]amino]-, 2'(or 3')-[(2-aminoethyl)carbamate] (9CI) (CA INDEX NAME)

CM 1

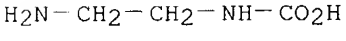
CRN 446850-57-3
CMF C17 H17 F N6 O6 S

Absolute stereochemistry.



CM 2

CRN 109-58-0
CMF C3 H8 N2 O2

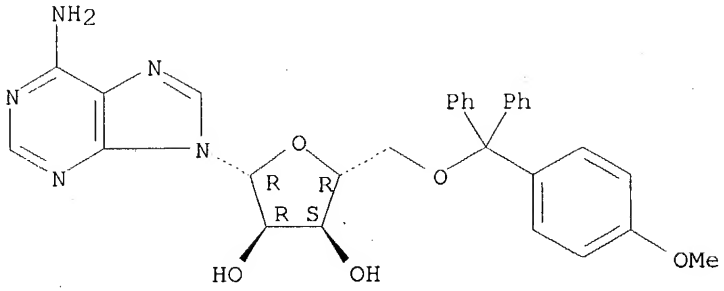


RN 446850-71-1 HCAPLUS
CN Adenosine, 5'-O-[(4-methoxyphenyl)diphenylmethyl]-, 2'(or 3')-[(2-aminoethyl)carbamate] (9CI) (CA INDEX NAME)

CM 1

CRN 51600-11-4
CMF C30 H29 N5 O5

Absolute stereochemistry.



CM 2

CRN 109-58-0
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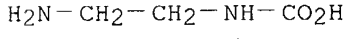
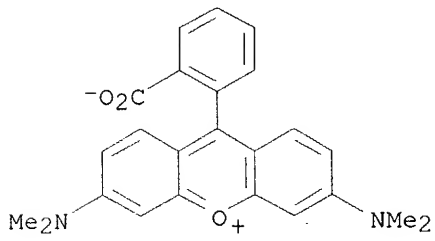
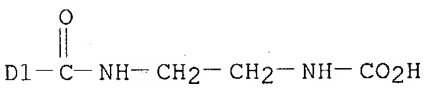


RN 446850-73-3 HCAPLUS
CN Adenosine, 2'(or 3')-[[2-[[3(or 4)-[3,6-bis(dimethylamino)xanthylium-9-yl]-4(or 3)-carboxybenzoyl]amino]ethyl]carbamate], inner salt (9CI) (CA INDEX NAME)

CM 1

CRN 446850-52-8
CMF C28 H28 N4 O6
CCI IDS





CM 2

CRN 58-61-7
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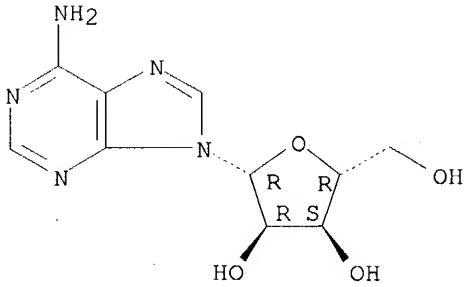
Absolute stereochemistry.



RN 446850-76-6 HCAPLUS
CN Adenosine, 2'(or 3')-[[2-[[3(or 4)-[3,6-bis(dimethylamino)xanthylium-9-yl]-4(or 3)-carboxybenzoyl]amino]ethyl]carbamate] 5'-(chloroacetate), inner salt (9CI) (CA INDEX NAME)

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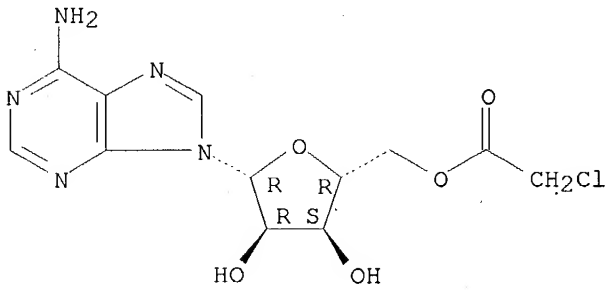
CMF C12 H14 Cl N5 O5

Absolute stereochemistry.



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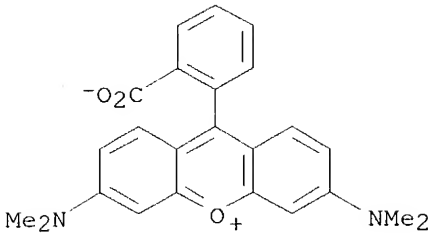
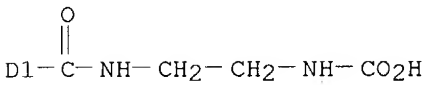
CCI IDS





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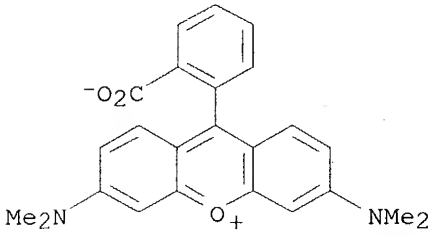
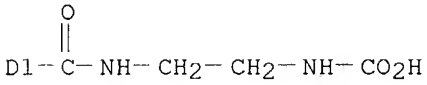
CN Adenosine, 2'(or 3')-[[2-[[3(or 4)-[3,6-bis(dimethylamino)xanthylium-9-yl]-4(or 3)-carboxybenzoyl]amino]ethyl]carbamate] 5'-[4-(fluorosulfonyl)benzoate], inner salt (9CI) (CA INDEX NAME)

CM 1

CRN 446850-52-8
CMF C28 H28 N4 O6
CCI IDS

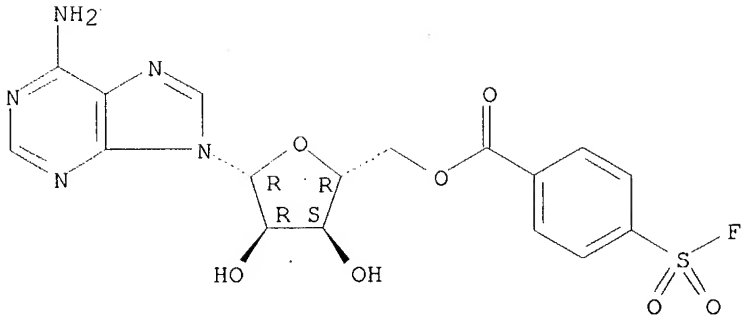




CM 2

CRN 57454-44-1
CMF C17 H16 F N5 O7 S

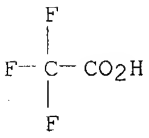
Absolute stereochemistry.



RN 446850-81-3 HCAPLUS
CN Adenosine, 5'-amino-5'-deoxy-, 2'(or 3')-[[2-[[[3(or 4)-[3,6-bis(dimethylamino)xanthylium-9-yl]-4(or 3)-carboxyphenyl]carbonyl]amino]ethyl]carbamate], inner salt, trifluoroacetate (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 76-05-1
CMF C2 H F3 O2

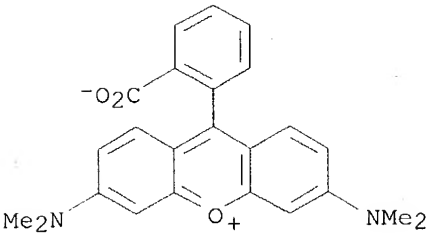


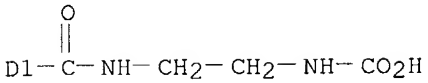
CM 2

CRN 446850-53-9
CMF C38 H40 N10 O8
CCI IDS

CM 3

CRN 446850-52-8
CMF C28 H28 N4 O6
CCI IDS

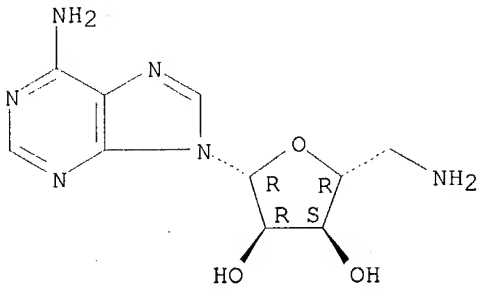




CM 4

CRN 14365-44-7
CMF C10 H14 N6 O3

Absolute stereochemistry.



IC ICM G01N
CC 9-14 (Biochemical Methods)
Section cross-reference(s): 1, 14
ST protein sepn electrophoresis synthesis **fluorescent** probe drug screening
IT Capillary electrophoresis
Cyanine dyes
Diagnosis
Diffusion
Drug screening
Dyes
Electrophoresis apparatus
Fluorescent substances
Fluorometry
Functional groups
Gel electrophoresis
Labels
Mass spectrometry
Pathogen
Separation
(activity based probe anal.)

IT **Dyes**
(**metal chelate**; activity based probe anal.)
IT **Dyes**
(**naphthylamine**; activity based probe anal.)
IT 189200-71-3DP, **Rhodamine** green, reaction with adenosine derivs.
446833-62-1P 446833-64-3P **446850-50-6P 446850-53-9P**
446850-55-1DP, reaction with **rhodamine** green
446850-58-4P 446850-61-9P 446850-64-2P
446850-67-5P 446850-69-7DP, reaction with
rhodamine green **446850-71-1P 446850-73-3P**
446850-76-6P 446850-79-9P 446850-81-3P
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(activity based probe anal.)

L20 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:90063 HCAPLUS
DOCUMENT NUMBER: 136:163716
TITLE: Labeled peptides, proteins and antibodies and processes and intermediates useful for their preparation
INVENTOR(S): Hahn, Klaus M.; Toutchkine, Alexei; Muthyala, Rajeev; Kraynov, Vadim; Bark, Steven J.; Burton, Dennis R.; Chamberlain, Chester
PATENT ASSIGNEE(S): The Scripps Research Institute, USA
SOURCE: PCT Int. Appl., 158 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002008245	A2	20020131	WO 2001-US22194	20010713
WO 2002008245	A3	20030130		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
WO 2002028890	A1	20020411	WO 2000-US26821	20000929
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 2002055133	A1	20020509	US 2001-839577	20010420

PRIORITY APPLN. INFO.: US 2000-218113P P 20000713

WO 2000-US26821 W 20000929
US 2001-279302P P 20010328
US 2001-839577 A 20010420

OTHER SOURCE(S): MARPAT 136:163716

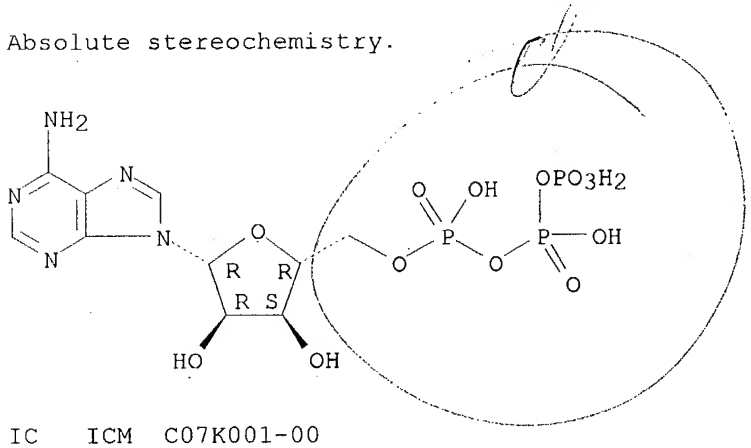
AB The invention provides peptide synthons having protected functional groups for attachment of desired moieties (e.g. functional mols. or probes). Also provided are peptide conjugates prepd. from such synthons, and synthon and conjugate prepn. methods including procedures for identifying optimum probe attachment sites. Biosensors are provided having functional mols. that can locate and bind to specific biomols. within living cells. Biosensors can detect chem. and physiol. changes in those biomols. as living cells are moving, metabolizing and reacting to its environment. Methods are included for detecting GTP activation of a Rho GTPase protein using polypeptide biosensors. When the biosensor binds GTP-activated Rho GTPase protein, an environmentally sensitive dye emits a signal of a different lifetime, intensity or wavelength than when not bound. New fluorophores whose **fluorescence** responds to environmental changes are also provided that have improved detection and attachment properties, and that can be used in living cells, or in vitro.

IT **56-65-5**, ATP, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

RN 56-65-5 HCAPLUS

CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



IC ICM C07K001-00

CC 9-14 (Biochemical Methods)
Section cross-reference(s): 7, 15, 34, 41

ST labeled peptide protein antibody prepn; biosensor targeting biomol living cell probe; GTP activation Rho GTPase detection polypeptide biosensor; fluorophore **fluorescence** probe environmental change living cell

IT Imaging
(FLAIR (**fluorescent** activation indicator for Rho proteins); labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT Proteins
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(cyan **fluorescent** protein, conjugates, polypeptide biosensor

contg.; labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT **Fluorescent dyes**
(**cyanine**, conjugates with peptides; labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT Proteins
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(enhanced green **fluorescent** protein, conjugates, polypeptide biosensor contg.; labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT Proteins
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(enhanced yellow green **fluorescent** protein, conjugates, polypeptide biosensor contg.; labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT **Cyanine dyes**
(**fluorescent**, conjugates with peptides; labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT **Fluorescent** substances
(fluorophores, for detecting changes in responses of living cells to environment; labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT Rho protein (G protein)
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(fusion proteins with **fluorescent** proteins; labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT Proteins
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(green **fluorescent**, conjugates, polypeptide biosensor contg.; labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT Biosensors
Blood serum
Cell
Cell migration
Endoplasmic reticulum
Fibroblast
Fluorescence
Fluorescence excitation
Fluorescence resonance energy transfer
Fluorescent dyes
Genetic vectors

Human
Phosphorescence
Phosphorescent substances
Signal transduction, biological
Stress, animal
Stress, microbial
Stress, plant
(labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT Fusion proteins (chimeric proteins)
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(of Rho GTPase protein and **fluorescent** proteins; labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT Proteins
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(red **fluorescent** protein, conjugates, polypeptide biosensor contg.; labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT Proteins
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(yellow green **fluorescent** protein, conjugates, polypeptide biosensor contg.; labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT 9059-32-9DP, GTPase, conjugates with **fluorescent** proteins
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(GTP-activated Rho; labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT 65-61-2DP, Acridine Orange, conjugates with peptides 1239-45-8DP, Ethidium Bromide, conjugates with peptides 1325-87-7DP, Cascade Blue, conjugates with peptides 1461-15-0DP, Calcein, conjugates with peptides 2321-07-5DP, **Fluorescein**, conjugates with peptides 2768-89-0DP, **Rhodamine** X, conjugates with peptides 3520-42-1DP, Lissamine **Rhodamine** B, conjugates with peptides 7059-24-7DP, Chromomycin A3, conjugates with peptides 7240-37-1DP, 7-AAD, conjugates with peptides 10199-91-4DP, NBD, conjugates with peptides 18378-89-7DP, Mithramycin, conjugates with peptides 23491-45-4DP, Hoechst 33258, conjugates with peptides 23491-52-3DP, Hoechst 33342, conjugates with peptides 25535-16-4DP, Propidium Iodide, conjugates with peptides 30230-57-0DP, conjugates with peptides 41085-99-8DP, conjugates with peptides 43070-85-5DP, Hydroxycoumarin, conjugates with peptides 47165-04-8DP, DAPI, conjugates with peptides 51908-46-4DP, Dansyl aziridine, conjugates with peptides 70281-37-7DP, Tetramethylrhodamine, conjugates with peptides 76421-73-3DP, Monochlorobimane, conjugates with peptides 76433-29-9DP, LDS 751,

conjugates with peptides 82354-19-6DP, Texas Red, conjugates with peptides 82446-52-4DP, Lucifer Yellow, conjugates with peptides 96314-96-4DP, Indo-1, conjugates with peptides 96314-98-6DP, Fura-2, conjugates with peptides 107091-89-4DP, Thiazole Orange, conjugates with peptides 107347-53-5DP, TRITC, conjugates with peptides 112117-57-4DP, conjugates with peptides 123632-39-3DP, Fluo-3, conjugates with peptides 126208-12-6DP, Carboxy-SNARF-1, conjugates with peptides 143245-02-7DP, conjugates with peptides 143413-84-7DP, TOTO-1, conjugates with peptides 143413-85-8DP, YOYO-1, conjugates with peptides 146368-15-2DP, Cy5, conjugates with peptides 146368-16-3DP, Cy3, conjugates with peptides 149838-22-2DP, FM 1-43, conjugates with peptides 153967-04-5DP, SNARF, conjugates with peptides 157199-59-2DP, TO-PRO-1, conjugates with peptides 157199-63-8DP, TO-PRO-3, conjugates with peptides 165599-63-3DP, BODIPY-FL, conjugates with peptides 166196-17-4DP, TOTO-3, conjugates with peptides 169799-14-8DP, Cy7, conjugates with peptides 194100-76-0DP, SYTOX Green, conjugates with peptides 204934-16-7DP, BODIPY TR, conjugates with peptides 237752-36-2DP, Red 613, conjugates with peptides 247145-11-5DP, Alexa-532, conjugates with peptides 287384-28-5DP, BODIPY TMR, conjugates with peptides 324767-53-5DP, SYTOX Orange, conjugates with peptides 396076-95-2DP, TruRed, conjugates with peptides 396077-00-2DP, SYTOX Blue, conjugates with peptides
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

IT **56-65-5**, ATP, biological studies 86-01-1, GTP 22537-22-0, Magnesium ion, biological studies 142805-58-1, MEK kinase
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(labeled peptides, proteins and antibodies and processes and intermediates useful for prepn.)

L20 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:561635 HCAPLUS
DOCUMENT NUMBER: 135:149435
TITLE: Coumarin 6, hypericin, resorufins, and flavins: suitable chromophores for **fluorescence** correlation spectroscopy of biological molecules
AUTHOR(S): Benes, Martin; Hudecek, Jiri; Anzenbacher, Pavel; Hof, Martin
CORPORATE SOURCE: J. Heyrovsky Institute of Physical Chemistry, Center for Complex Molecular Systems and Biomolecules, Academy of Science of the Czech Republic, Prague, CZ-18223/8, Czech Rep.
SOURCE: Collection of Czechoslovak Chemical Communications (2001), 66(6), 855-869
CODEN: CCCCAK; ISSN: 0010-0765
PUBLISHER: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In this work we show that the **dyes coumarin** 6, hypericin, 7-O-ethylresorufin and resorufin are suitable for **fluorescence** correlation spectroscopy (FCS) and demonstrate the use of these **dyes** in physiol. relevant protein studies. Since

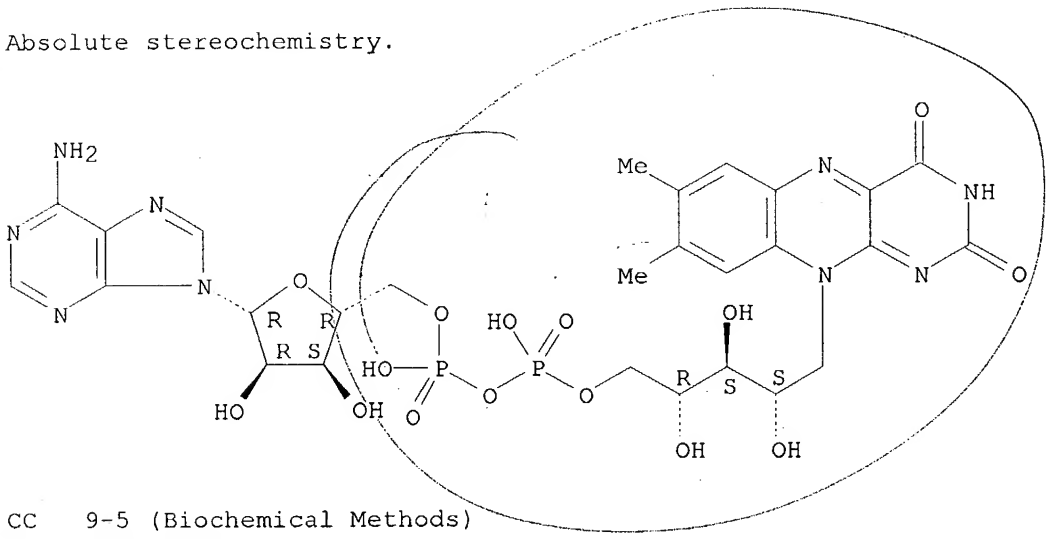
coumarins are metabolized by cytochromes P 450, the binding of coumarin 6 to cytochrome P 450 3A4 was investigated by FCS. Coumarin 6 appears to be a very bright non-covalent cytochrome P 450 label. When titrating cytochrome P 450 3A4 with coumarin 6, the diffusion time of the coumarin 6/cytochrome P 450 3A4 complex increases roughly two-fold at protein concns. higher than 1 .mu.mol l-1, indicating the formation of cytochrome aggregates. FCS of the FMN (FMN) and FAD (FAD) shows that both endogenous dyes undergo photobleaching. Moreover, FAD appears to be present to great extent, as a non-**fluorescent** intramol. complex. Anal. of the FCS data of the flavoprotein NADPH-cytochrome P 450 oxidoreductase (mol. wt. 76 500) yielded two components. While the slow component corresponds to a globular protein with the mol. wt. about 75 000, the fast component appears to be due to free diffusing FMN and FAD mols. The amt. of free FMN and FAD increases with increasing laser power. At high laser power a complete photodissocn. of FMN and FAD occurs.

IT **146-14-5**, FAD
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(coumarin 6, hypericin, resorufins, and flavins: suitable chromophores for **fluorescence** correlation spectroscopy of biol. mols.)

RN 146-14-5 HCAPLUS

CN Riboflavin 5'-(trihydrogen diphosphate), P'.fwdarw.5'-ester with adenosine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



CC 9-5 (Biochemical Methods)

IT Diffusion
Fluorometry
Photochemical bleaching
Simulation and Modeling, physicochemical
(coumarin 6, hypericin, resorufins, and flavins: suitable chromophores for **fluorescence** correlation spectroscopy of biol. mols.)

IT Proteins, specific or class
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(globular; coumarin 6, hypericin, resorufins, and flavins: suitable chromophores for **fluorescence** correlation spectroscopy of biol. mols.)

IT 548-04-9, Hypericin 635-78-9, Resorufin 989-38-8, **rhodamine** 6G 5725-91-7, o-Ethylresorufin 38215-36-0, coumarin 6
RL: ARG (Analytical reagent use); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process); USES (Uses)
(coumarin 6, hypericin, resorufins, and flavins: suitable chromophores

for **fluorescence** correlation spectroscopy of biol. mols.)
IT **146-14-5**, FAD 146-17-8, Flavin mononucleotide 9035-51-2, cytochrome P 450, processes 9039-06-9 329736-03-0, cytochrome P 450 3A4
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(coumarin 6, hypericin, resorufins, and flavins: suitable chromophores for **fluorescence** correlation spectroscopy of biol. mols.)
REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2000:421344 HCAPLUS
DOCUMENT NUMBER: 133:55658
TITLE: A heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes
INVENTOR(S): Williams, John G. K.
PATENT ASSIGNEE(S): Li-Cor, Inc., USA
SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000036151	A1	20000622	WO 1999-US29584	19991213
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6232075	B1	20010515	US 1999-460304	19991213
US 6255083	B1	20010703	US 1999-460303	19991213
US 2001018184	A1	20010830	US 2001-816720	20010321
US 2002115076	A1	20020822	US 2001-859104	20010514

PRIORITY APPLN. INFO.:
US 1998-112078P P 19981214
US 1999-115496P P 19990111
US 1999-460303 A3 19991213
US 1999-460304 A1 19991213

AB Nucleotide triphosphate (NTP) probes contg. a fluorophore attached to the .gamma.-phosphate and a quencher moiety sufficiently proximal to the fluorophore moiety for use in pyrophosphate detection assays are disclosed. These probes exhibit distinguishable **fluorescence** characteristics when the fluorophore is attached to the nucleotide through the .gamma.-phosphate and when it is unattached to the nucleotide. The present invention also provides kits and integrated systems/methods for practicing the assays described herein. The method is based on incorporation of the NTP into a nucleic acid primer strand using polymerase immobilized on a solid support, thereby releasing the **fluorescent** probe. A change in **fluorescence** characteristics is detected through either **fluorescent** intensity

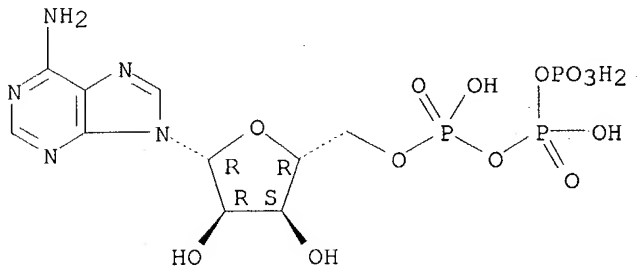
or lifetime measurement.

IT **56-65-5D**, Adenosine triphosphate, **fluorescent** labeled, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

RN 56-65-5 HCAPLUS

CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



IC ICM C12Q001-68
ICS C12P019-34; C07H019-00; C07H021-00; C07H021-02; C07H021-04

CC 9-15 (Biochemical Methods)
Section cross-reference(s): 3

ST pyrophosphate detection assay **fluorescent** NTP probe primer polymerase

IT **Fluorescent** probes
Nucleic acid amplification (method)
PCR (polymerase chain reaction)
Test kits
(a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT Deoxyribonucleoside triphosphates
Nucleoside triphosphates
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT Primers (nucleic acid)
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT Crosslinking agents
(alkylene or alkynylamino, for fluorophores; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT Resonant energy transfer
(between fluorophore and quencher via; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT **Cyanine dyes**
(fluorophore; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT Plate glass
Polyamide fibers, uses
RL: DEV (Device component use); USES (Uses)
(immobilization of polymerase and DNA on; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT DNA
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(immobilized; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT Enzymes, biological studies
RL: BUU (Biological use, unclassified); CAT (Catalyst use); BIOL (Biological study); USES (Uses)
(immobilized; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT **Fluorescence**
(intensity, measurement of; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT Electron transfer
(intramol., between fluorophore and quencher via; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT **Fluorescence** quenching
(intramol., ground-state complex; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT **Fluorescence** quenching
(intramol.; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT **Fluorescence**
(lifetime, measurement of; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT Pyrimidine nucleotides
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(linker attachment to 5 position; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT Purine nucleotides
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(linker attachment to 7 position; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT Glass, uses
RL: DEV (Device component use); USES (Uses)
(porous, immobilization of polymerase and DNA on; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT Phosphate group
(.gamma.-, of NTP, fluorophore attached to; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT 277756-37-3
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(NTP probe; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT 14000-31-8, Pyrophosphate

RL: ANT (Analyte); ANST (Analytical study)
(a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT **56-65-5D**, Adenosine triphosphate, **fluorescent** labeled, biological studies 63-39-8D, Uridine triphosphate, **fluorescent** labeled 65-47-4D, CTP, **fluorescent** labeled 86-01-1D, Guanosine triphosphate, **fluorescent** labeled 365-08-2D, DTTP, **fluorescent** labeled 1927-31-7D, DATP, **fluorescent** labeled 2056-98-6D, DCTP, **fluorescent** labeled 2564-35-4D, DGTP, **fluorescent** labeled
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT 9012-90-2, DNA polymerase 9014-24-8, DNA dependent RNA polymerase 9068-38-6, Reverse transcriptase
RL: BUU (Biological use, unclassified); CAT (Catalyst use); BIOL (Biological study); USES (Uses)
(a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT 88-68-6, Anthranilamide 91-64-5, Coumarin 7440-27-9D, Terbium, chelate, uses 17681-50-4, Reactive Red 4 50402-56-7, EDANS 76823-03-5, 5-Carboxyfluorescein 138026-71-8, BODIPY
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(fluorophore; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT 79-06-1D, Acrylamide, gel 9003-53-6, Polystyrene 9003-53-6D, Polystyrene, avidin coated bead 9004-34-6, Cellulose, uses 9004-54-0, Dextran, uses
RL: DEV (Device component use); USES (Uses)
(immobilization of polymerase and DNA on; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT 81-88-9 2321-07-5, **Fluorescein**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(quencher or fluorophore; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

IT 99-35-4, Trinitrobenzene 569-64-2, Malachite green 3546-21-2, Ethidium 6268-49-1 25154-54-5, Dinitrobenzene 25338-56-1, Pyrenebutanoic acid 70281-37-7, Tetramethyl **rhodamine** 82354-19-6, Texas Red 202466-51-1
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(quencher; a heterogeneous assay for pyrophosphate detection using **fluorescent** nucleotide triphosphate probes)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:222928 HCAPLUS
DOCUMENT NUMBER: 130:264438
TITLE: Sulfonated xanthene derivatives synthesis and applications as **fluorescent** stains
INVENTOR(S): Mao, Fei; Leung, Wai-Yee; Haugland, Richard P.
PATENT ASSIGNEE(S): Molecular Probes, Inc., USA
SOURCE: PCT Int. Appl., 63 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9915517	A1	19990401	WO 1998-US19921	19980923
W: AU, CA, JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6130101	A	20001010	US 1997-935963	19970923
AU 9895046	A1	19990412	AU 1998-95046	19980923
AU 750380	B2	20020718		
EP 966458	A1	19991229	EP 1998-948483	19980923
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE, IE				
JP 2001508494	T2	20010626	JP 1999-519270	19980923
WO 2000017650	A1	20000330	WO 1999-US22193	19990923
W: AU, CA, JP				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9964002	A1	20000410	AU 1999-64002	19990923

PRIORITY APPLN. INFO.:
US 1997-935963 A 19970923
WO 1998-US19921 W 19980923
US 1998-209045 A 19981209
WO 1999-US22193 W 19990923

OTHER SOURCE(S): MARPAT 130:264438

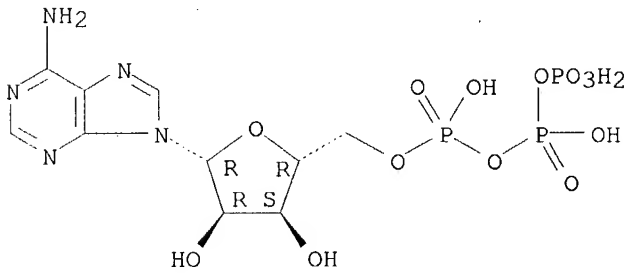
AB The present invention describes **xanthene dyes**, including **rhodamines**, rhodols and **fluoresceins** that are substituted one or more times by a sulfonic acid or a salt of a sulfonic acid. The dyes of the invention, including chem. reactive dyes and dye-conjugates are useful as **fluorescent** probes, particularly in biol. samples.

IT **56-65-5**, 5'-ATP, analysis
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

RN 56-65-5 HCAPLUS

CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



IC ICM C07D311-82
ICS C07D491-14; C07D405-12; C07D491-22; C07H003-06; C07H021-00;

C07H019-04; C07K014-415; G01N001-30
CC 9-15 (Biochemical Methods)
Section cross-reference(s): 6, 27
ST sulfonated **xanthene fluorescent dye** probe conjugate stain
IT Proteins, specific or class
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(A; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)
IT Immunoglobulins
Proteins, specific or class
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(G; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)
IT Phycoerythrins
RL: RCT (Reactant); RACT (Reactant or reagent)
(R-phycoerythrins, pyridyldisulfide modified; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)
IT Proteins, specific or class
RL: BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(conjugates, sulfonated xanthene conjugate; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)
IT Escherichia coli
(derivatized with amine-reactive sulfonated **xanthene dye**; sulfonated **xanthene** derivs. synthesis and applications as **fluorescent** stains)
IT Staining, biological
Stains, biological
(**fluorescent**; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)
IT Gene, animal
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(for actin; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)
IT Actins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(gene for; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)
IT Drug delivery systems
(injections, microinjection; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)
IT Nerve
(neuron, cell tracing; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)
IT Receptors
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(pharmaceutical; sulfonated xanthene derivs. synthesis and applications

as **fluorescent** stains)
IT Organelle
(pinosome; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)
IT Artery
(pulmonary, cells; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)
IT Animal cell
Bacteria (Eubacteria)
Complexing agents
Drugs
Microparticles
Plant cell
Protista
Virus
Yeast
(sulfonated xanthene conjugate; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)
IT Actins
Agglutinins and Lectins
Allophycocyanins
Amino acids, biological studies
Antibodies
Avidins
Biliproteins
Disaccharides
Growth factors, animal
Haptens
Lipids, biological studies
Monosaccharides
Nucleic acids
Nucleotides, biological studies
Peptides, biological studies
Polymers, biological studies
Polysaccharides, biological studies
Toxins
RL: BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(sulfonated xanthene conjugate; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)
IT Chelating agents
Cytolysis
Drugs
Electroporation
Fluorescent dyes
Fluorescent probes
Fluorescent substances
Ions
Liposomes
Microtubule
Nucleic acid hybridization
Phagocytosis
Staining, biological
Stains, biological
Staphylococcus aureus
Test kits

(sulfonated **xanthene** derivs. synthesis and applications as **fluorescent** stains)

IT DNA
RL: ANT (Analyte); ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Actins
Tubulins
mRNA
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Agglutinins and Lectins
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Antibodies
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Antigens
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Avidins
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Carbohydrates, analysis
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Enzymes, analysis
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Hormone receptors
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as

fluorescent stains)

IT Hormones, animal, analysis
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Peptide receptors
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Peptides, analysis
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Probes (nucleic acid)
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Protein receptors
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Proteins, general, analysis
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT RNA
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Receptors
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Toxins
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT Agglutinins and Lectins
RL: RCT (Reactant); RACT (Reactant or reagent)

(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT **Dyes**
(**xanthene**; sulfonated **xanthene** derivs. synthesis and applications as **fluorescent** stains)

IT 178623-12-6DP, **Rhodamine** Red X, conjugates
RL: SPN (Synthetic preparation); PREP (Preparation)
(**Rhodamine** Red X; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT 9003-53-6DP, Polystyrene, amine deriv.
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**fluorescently** labeled microspheres; sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT 58-85-5, Biotin 9013-20-1, Streptavidin 17466-45-4, Phalloidin
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT **56-65-5**, 5'-ATP, analysis
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT 222164-96-7DP, conjugate
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT 222164-86-5P 222164-96-7P
RL: ARU (Analytical role, unclassified); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT 222159-90-2P
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT 9013-20-1DP, Streptavidin, sulfonated xanthene conjugate
RL: BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(sulfonated xanthene derivs. synthesis and applications as **fluorescent** stains)

IT 68-11-1, Mercaptoacetic acid, reactions 117-08-8, Tetrachlorophthalic anhydride 463-71-8, Thiophosgene 552-30-7, Trimellitic anhydride 619-66-9, 4-Carboxybenzaldehyde 652-12-0, Tetrafluorophthalic anhydride 870-46-2, tert-Butyl carbazate 1319-82-0, Aminocaproic acid 5466-84-2, 4-Nitrophthalic anhydride 11032-79-4D, .alpha.-Bungarotoxin, conjugate 35167-99-8D, amino deriv. 37293-51-9, Aminodextran 41175-50-2

51644-96-3 58196-33-1 63095-11-4 93801-18-4D, conjugate
105832-38-0 126695-58-7 163222-21-7D, **rhodamine** deriv.
conjugate 179898-22-7 220906-39-8 222159-69-5 222159-71-9
222159-75-3 222159-87-7 222164-84-3 222164-97-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(sulfonated xanthene derivs. synthesis and applications as
fluorescent stains)

IT 222159-70-8P 222159-72-0P 222159-73-1P 222159-74-2P 222159-79-7P
222159-82-2P 222159-84-4P 222159-85-5P 222164-80-9P 222164-81-0P
222164-92-3P 222164-95-6P 222164-98-9P 222164-99-0P 222165-01-7P
222165-02-8P 222165-04-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(sulfonated xanthene derivs. synthesis and applications as
fluorescent stains)

IT 2321-07-5DP, **Fluorescein**, conjugates 146397-20-8DP, CY-3,
conjugates 183185-51-5DP, Rhodol Green, conjugates 189200-71-3DP,
Rhodamine Green, conjugates 199745-67-0DP, Texas Red-X,
conjugates 222159-76-4P 222159-78-6P 222159-80-0P 222159-81-1P
222159-82-2DP, conjugate 222159-83-3P 222159-86-6P 222159-92-4DP,
conjugate 222159-93-5DP, conjugate 222164-82-1P 222164-83-2P
222164-86-5DP, conjugate 222164-87-6P 222164-88-7P 222164-91-2P
222164-92-3DP, conjugate 222164-93-4P 222164-95-6DP, conjugate
222165-00-6P 222165-01-7DP, conjugate 222165-04-0DP, spiperone
conjugate
RL: SPN (Synthetic preparation); PREP (Preparation)
(sulfonated xanthene derivs. synthesis and applications as
fluorescent stains)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1998:186454 HCAPLUS
DOCUMENT NUMBER: 128:227061
TITLE: Alternative dye-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA analysis and homogeneous amplification/detection assays
INVENTOR(S): Metzker, Michael L.; Gibbs, Richard A.
PATENT ASSIGNEE(S): Baylor College of Medicine, USA
SOURCE: U.S., 11 pp., Cont.-in-part of U.S. 5,614,386.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5728529	A	19980317	US 1995-553936	19951106
US 5614386	A	19970325	US 1995-494216	19950623
WO 9700967	A1	19970109	WO 1996-US10729	19960621
W: AU, CA, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2225531	AA	19970109	CA 1996-2225531	19960621
AU 9662886	A1	19970122	AU 1996-62886	19960621
AU 699939	B2	19981217		

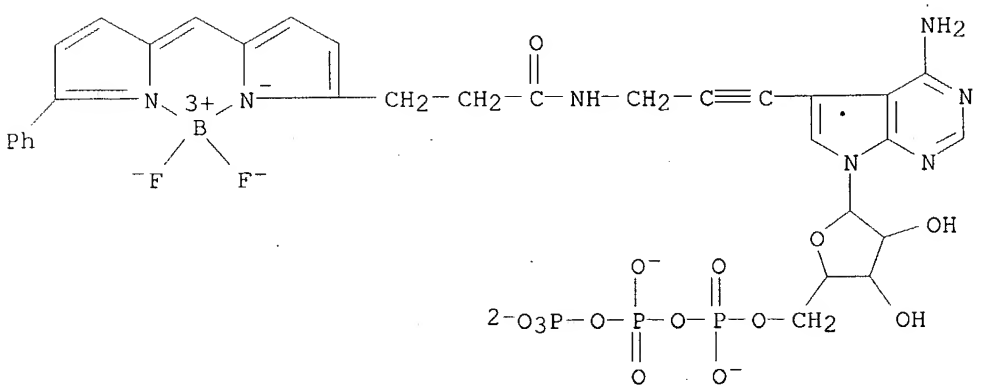
EP 833936 A1 19980408 EP 1996-921749 19960621
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI
PRIORITY APPLN. INFO.: US 1995-494216 19950623
US 1995-540228 19951006
US 1995-553936 19951106
US 1996-612036 19960307
WO 1996-US10729 19960621

AB Methods for the use of a class dyes for improved DNA sequencing are provided. A new class of **dyes**, **BODIPY**.RTM. fluorophores, has been described recently. The parent heterocyclic mol. of the BODIPY.RTM. fluorophores is a dipyrrometheneboron difluoride compd. which is modified to create a broad class of spectrally-discriminating fluorophores. The present invention provides methods for the use of **BODIPY**.RTM. fluorophore-labeled DNA for **dye**-primer sequencing in which the **BODIPY**.RTM.s are attached to the 5' end of sequencing by enzymic incorporation of **fluorescently**-labeled ribonucleotides or deoxyribonucleotides, and provides oligonucleotides labeled with substituted 4,4-difluoro-4-bora-3A,4A-diaza-s-indacene (**BODIPY**.RTM. fluorophore) compds. for performing the Taqman assay. **BODIPY**.RTM. fluorophores have improved spectral characteristics compared to conventional **fluorescein** and **rhodamine dyes**. BODIPY.RTM. fluorophores have narrower band width, insensitivity to solvent or pH, and improved photostability; thus, BODIPY.RTM. fluorophores lead to improved DNA sequencing and/or detection in any method where electrophoresis and detection of DNA is required. Addnl., the spectral properties of the BODIPY.RTM. fluorophores are sufficiently similar in wavelength and intensity to be used with conventional equipment known in the art.

IT **186961-32-0DP**, oligonucleotide primers labeled with
186961-33-1DP, oligonucleotide primers labeled with
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(alternative dye-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)

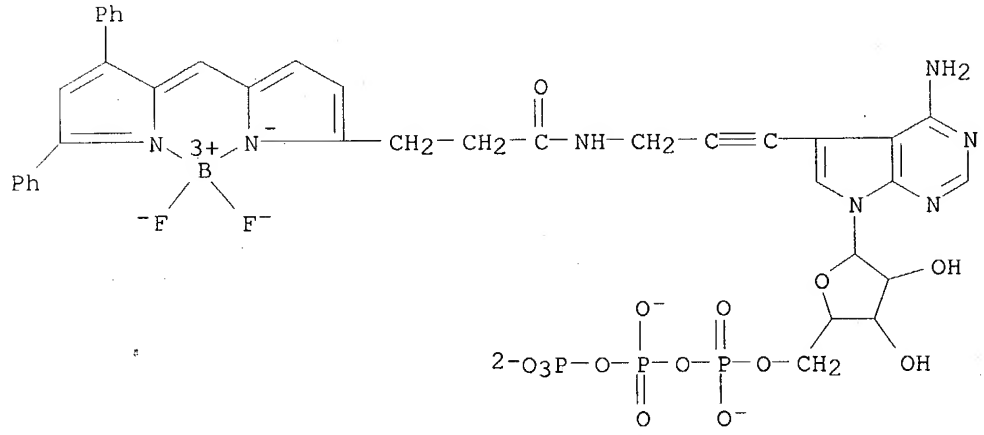
RN 186961-32-0 HCAPLUS

CN Borate(4-), [N-[3-[4-amino-7-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-.beta.-D-ribofuranosyl]-7H-pyrrolo[2,3-d]pyrimidin-5-yl]-2-propynyl]-5-[(5-phenyl-2H-pyrrol-2-ylidene-.kappa.N)methyl]-1H-pyrrole-2-propanamidato(5-)-.kappa.N1]difluoro-, tetrahydrogen, (T-4)- (9CI) (CA INDEX NAME)



● 4 H^+

RN 186961-33-1 HCAPLUS
CN Borate(4-), [N-[3-[4-amino-7-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-.beta.-D-ribofuranosyl]-7H-pyrrolo[2,3-d]pyrimidin-5-yl]-2-propynyl]-5-[(3,5-diphenyl-2H-pyrrol-2-ylidene-.kappa.N)methyl]-1H-pyrrole-2-propanamidato(5-)-.kappa.N1]difluoro-, tetrahydrogen, (T-4)- (9CI) (CA INDEX NAME)



● 4 H^+

IC ICM C12Q001-68
ICS C12Q001-70; C07H021-04; C12P019-34
NCL 435006000
CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 33
IT Deoxyribonucleoside triphosphates
Nucleoside triphosphates

Primers (nucleic acid)
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(**BODIPY** fluorophore-labeled; alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)

IT **Fluorescent** substances
(**BODIPY**; alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)

IT Deoxyribonucleotides
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(deoxyribodinucleotides, triphosphates, **BODIPY** fluorophore-labeled; alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)

IT 187089-10-7DP, oligonucleotide primers labeled with
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(**BODIPY** 530/550; alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)

IT 150173-78-7DP, oligonucleotide primers labeled with
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(**BODIPY** 576/589; alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)

IT 186961-29-5DP, oligonucleotide primers labeled with
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(**BODIPY** 589/616; alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)

IT 120718-52-7DP, TAMRA, oligonucleotide primers labeled with 138026-71-8DP, **BODIPY**, oligonucleotide primers labeled with 150152-69-5DP, **BODIPY** 581/591, oligonucleotide primers labeled with 150173-72-1DP, oligonucleotide primers labeled with 150173-89-0DP, **BODIPY** 564/570, oligonucleotide primers labeled with 165599-63-3DP, **BODIPY** 503/512, oligonucleotide primers labeled with 174881-57-3DP, **BODIPY** 523/547, oligonucleotide primers labeled with 186961-30-8DP, oligonucleotide primers labeled with 186961-31-9DP, oligonucleotide primers labeled with **186961-32-0DP**, oligonucleotide primers labeled with **186961-33-1DP**, oligonucleotide primers labeled with 186961-34-2DP, oligonucleotide primers labeled with 186961-35-3DP, oligonucleotide primers labeled with 186961-36-4DP, oligonucleotide primers labeled with 186961-37-5DP, oligonucleotide primers labeled with 186961-38-6DP, oligonucleotide primers labeled with 186961-39-7DP, oligonucleotide primers labeled with 186961-40-0DP, oligonucleotide primers labeled with 186961-41-1DP, oligonucleotide primers labeled with 186961-42-2DP, oligonucleotide primers labeled with 186961-43-3DP, oligonucleotide primers labeled with 186961-44-4DP, oligonucleotide primers labeled with 186961-45-5DP, oligonucleotide primers labeled with 186961-46-6DP, oligonucleotide primers labeled with 186961-47-7DP, oligonucleotide primers labeled with

186961-48-8DP, oligonucleotide primers labeled with 186961-49-9DP, oligonucleotide primers labeled with 186961-50-2DP, oligonucleotide primers labeled with 186961-51-3DP, oligonucleotide primers labeled with 186961-52-4DP, oligonucleotide primers labeled with 186961-53-5DP, oligonucleotide primers labeled with
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)

L20 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1997:172504 HCAPLUS
DOCUMENT NUMBER: 126:167460
TITLE: Alternative dye-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA analysis and homogeneous amplification/detection assays
INVENTOR(S): Metzker, Michael L.; Gibbs, Richard A.
PATENT ASSIGNEE(S): Baylor College of Medicine, USA
SOURCE: PCT Int. Appl., 83 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9700967	A1	19970109	WO 1996-US10729	19960621
W: AU, CA, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5614386	A	19970325	US 1995-494216	19950623
US 5861287	A	19990119	US 1995-540228	19951006
US 5728529	A	19980317	US 1995-553936	19951106
US 5994063	A	19991130	US 1996-612036	19960307
AU 9662886	A1	19970122	AU 1996-62886	19960621
AU 699939	B2	19981217		
EP 833936	A1	19980408	EP 1996-921749	19960621
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.:

US 1995-494216	19950623
US 1995-540228	19951006
US 1995-553936	19951106
US 1996-612036	19960307
WO 1996-US10729	19960621

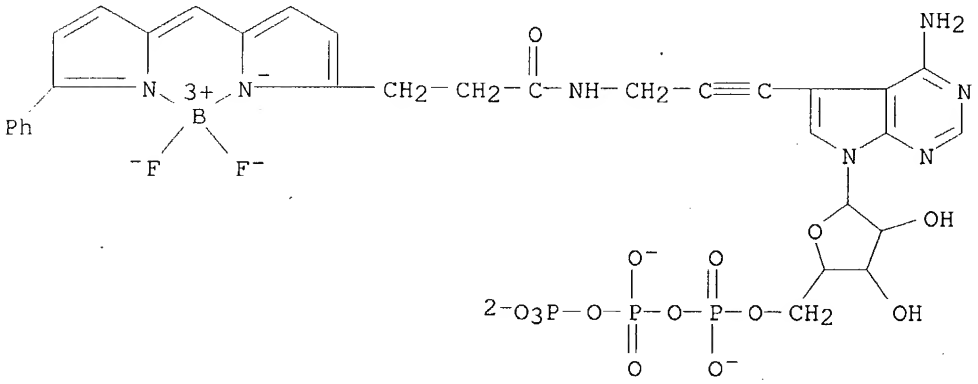
AB Methods for the use of a class dyes for improved DNA sequencing are provided. A new class of **dyes**, **BODIPY**.RTM. fluorophores, has been described recently. The parent heterocyclic mol. of the BODIPY.RTM. fluorophores is a dipyrromethene boron difluoride compd. which is modified to create a broad class of spectrally-discriminating fluorophores. The present invention provides methods for the use of **BODIPY**.RTM. fluorophore-labeled DNA for **dye**-primer sequencing in which the **BODIPY**.RTM.s are attached to the 5' end of sequencing by enzymic incorporation of **fluorescently**-labeled ribonucleotides or deoxyribonucleotides, and provides oligonucleotides labeled with substituted 4,4-difluoro-4-bora-3A,4A-diaza-s-indacene (

BODIPY.RTM. fluorophore) compds. for performing the Taqman assay. **BODIPY**.RTM. fluorophores have improved spectral characteristics compared to conventional **fluorescein** and **rhodamine dyes**. BODIPY.RTM. fluorophores have narrower band width, insensitivity to solvent or pH, and improved photostability; thus, BODIPY.RTM. fluorophores lead to improved DNA sequencing and/or detection in any method where electrophoresis and detection of DNA is required. Addnl., the spectral properties of the BODIPY.RTM. fluorophores are sufficiently similar in wavelength and intensity to be used with conventional equipment known in the art.

IT **186961-32-0DP**, oligonucleotide primers labeled with
186961-33-1DP, oligonucleotide primers labeled with
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(alternative dye-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)

RN 186961-32-0 HCAPLUS

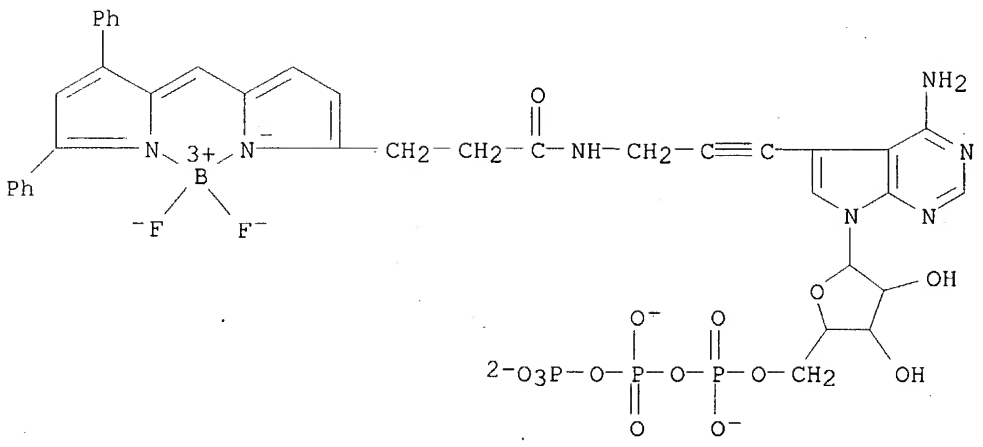
CN Borate(4-), [N-[3-[4-amino-7-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-.beta.-D-ribofuranosyl]-7H-pyrrolo[2,3-d]pyrimidin-5-yl]-2-propynyl]-5-[(5-phenyl-2H-pyrrol-2-ylidene-.kappa.N)methyl]-1H-pyrrole-2-propanamidato(5-)-.kappa.N1]difluoro-, tetrahydrogen, (T-4)- (9CI) (CA INDEX NAME)



● 4 H^+

RN 186961-33-1 HCAPLUS

CN Borate(4-), [N-[3-[4-amino-7-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-.beta.-D-ribofuranosyl]-7H-pyrrolo[2,3-d]pyrimidin-5-yl]-2-propynyl]-5-[(3,5-diphenyl-2H-pyrrol-2-ylidene-.kappa.N)methyl]-1H-pyrrole-2-propanamidato(5-)-.kappa.N1]difluoro-, tetrahydrogen, (T-4)- (9CI) (CA INDEX NAME)



● 4 H^+

IC ICM C12P019-34
ICS C12Q001-68; C12Q001-70; C07H019-04
CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 33
IT Deoxyribonucleoside triphosphates
Nucleoside triphosphates
Primers (nucleic acid)
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(**BODIPY** fluorophore-labeled; alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)
IT **Fluorescent** substances
(**BODIPY**; alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)
IT Deoxyribonucleotides
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(deoxyribodinucleotides, triphosphates, **BODIPY** fluorophore-labeled; alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)
IT 187089-10-7DP, oligonucleotide primers labeled with
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(**BODIPY** 530/550; alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)
IT 150173-78-7DP, oligonucleotide primers labeled with
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(**BODIPY** 576/589; alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for

automated DNA anal. and homogeneous amplification/detection assays)

IT 186961-29-5DP, oligonucleotide primers labeled with
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(**BODIPY** 589/616; alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)

IT 120718-52-7DP, TAMRA, oligonucleotide primers labeled with 138026-71-8DP, **BODIPY**, oligonucleotide primers labeled with 150152-69-5DP, **BODIPY** 581/591, oligonucleotide primers labeled with 150173-72-1DP, oligonucleotide primers labeled with 150173-89-0DP, **BODIPY** 564/570, oligonucleotide primers labeled with 165599-63-3DP, **BODIPY** 503/512, oligonucleotide primers labeled with 174881-57-3DP, **BODIPY** 523/547, oligonucleotide primers labeled with 186961-30-8DP, oligonucleotide primers labeled with 186961-31-9DP, oligonucleotide primers labeled with **186961-32-0DP**, oligonucleotide primers labeled with **186961-33-1DP**, oligonucleotide primers labeled with 186961-34-2DP, oligonucleotide primers labeled with 186961-35-3DP, oligonucleotide primers labeled with 186961-36-4DP, oligonucleotide primers labeled with 186961-37-5DP, oligonucleotide primers labeled with 186961-38-6DP, oligonucleotide primers labeled with 186961-39-7DP, oligonucleotide primers labeled with 186961-40-0DP, oligonucleotide primers labeled with 186961-41-1DP, oligonucleotide primers labeled with 186961-42-2DP, oligonucleotide primers labeled with 186961-43-3DP, oligonucleotide primers labeled with 186961-44-4DP, oligonucleotide primers labeled with 186961-45-5DP, oligonucleotide primers labeled with 186961-46-6DP, oligonucleotide primers labeled with 186961-47-7DP, oligonucleotide primers labeled with 186961-48-8DP, oligonucleotide primers labeled with 186961-49-9DP, oligonucleotide primers labeled with 186961-50-2DP, oligonucleotide primers labeled with 186961-51-3DP, oligonucleotide primers labeled with 186961-52-4DP, oligonucleotide primers labeled with 186961-53-5DP, oligonucleotide primers labeled with
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(alternative **dye**-labeled primers, ribonucleotides, deoxyribonucleotides, and dideoxyribonucleotides for automated DNA anal. and homogeneous amplification/detection assays)

L20 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1990:548385 HCAPLUS
DOCUMENT NUMBER: 113:148385
TITLE: Incorporation of thionucleotides into nucleic acids and oligonucleotides, and their application in nucleic acid sequencing and hybridization assays using **fluorescence** quenching
INVENTOR(S): Greulich, Karl Otto; Seidel, Claus; Wolfrum, Juergen; Auer, Manfred; Gautel, Matthias; Goody, Roger; Labeit, Siegfried
PATENT ASSIGNEE(S): Fed. Rep. Ger.
SOURCE: Ger. Offen., 7 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3807975	A1	19890928	DE 1988-3807975	19880310
DE 3807975	C2	20020307		
US 6087101	A	20000711	US 1997-990734	19971215

PRIORITY APPLN. INFO.: DE 1988-3807975 A 19880310
US 1990-525038 B1 19900518

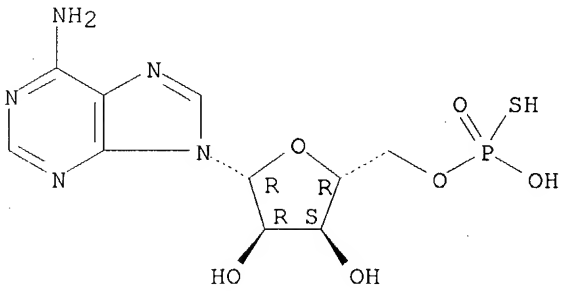
AB A **fluorescent** dye which shows different quenching behaviors with the 4 nucleic acid bases is useful for detn. of base sequences in nucleic acids and oligonucleotides. Such **dyes** include **fluoresceins, rhodamines, coumarins,** carbostyryls, and oxadiazoles. The dye is attached via the S atom of a thionucleotide introduced e.g. by nick translation. Probes labeled in this manner are also useful in hybridization assays. Thus, a BglI-SalI fragment of the human immunodeficiency virus I pol reading frame was cloned in vector M13mp19, hybridized with GTAAAACGACGGCCA, and incubated (in 4 sep. reactions) with DNA polymerase Klenow fragment in the presence of TTP, dCTP, dGTP, dATP, and each of the 4 2',3'-deoxy-.alpha.-thionucleoside triphosphates S-labeled with 7-amino-N-(2-ethylaminocarbonyliodomethyl)-4-methylcoumarin as terminating nucleotides. The DNA segments were sepd. by PAGE in the presence of 8M urea in a "1-track-1-dye" method which used measurements of **fluorescence** lifetime of the dye to identify the base in each segment.

IT **19341-57-2**
RL: PROC (Process)
(DNA incorporation of, for sequencing, **fluorescent** dye labeling in relation to)

RN 19341-57-2 HCAPLUS

CN Adenosine, 5'-(dihydrogen phosphorothioate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



IC ICM C12Q001-68
ICS G01N033-50

ICA C07H021-04; C12P019-34; C07H021-00

CC 9-5 (Biochemical Methods)

ST **fluorescence** quenching nucleic acid sequencing; thionucleotide **fluorescent** label hybridization assay

IT Deoxyribonucleic acid sequences
(detn. of, thionucleotide incorporation and **fluorescence** quenching in relation to)

IT Nucleic acid hybridization
(thionucleotide incorporation and **fluorescent** dye labeling in relation to)

IT Nucleic acids

RL: ANST (Analytical study)
(thionucleotide incorporation into, for sequencing, detection by **fluorescence** quenching in relation to)

IT Nucleotides, biological studies
RL: BIOL (Biological study)
(2',3'-dideoxy-, [.alpha.-thio]triphosphates, nucleic acid incorporation of, for sequencing, detection by **fluorescence** quenching in relation to)

IT Dyes
(**fluorescent**, nucleic acid and oligonucleotide labeling with, for hybridization assay, thionucleotide incorporation in relation to)

IT Nucleotides, polymers
RL: ANST (Analytical study)
(oligo-, thionucleotides incorporation into, for sequencing and hybridization assays, detection by **fluorescence** quenching in relation to)

IT Nucleotides, uses and miscellaneous
RL: USES (Uses)
(thio, nucleic acid incorporation of, **fluorescence** dye labeling for hybridization assay in relation to)

IT 15548-51-3 15867-02-4 **19341-57-2** 47151-76-8
RL: PROC (Process)
(DNA incorporation of, for sequencing, **fluorescent** dye labeling in relation to)

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=> d que
L45          802 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (PROTEIN OR PROTEOM?)(3A)(ANAL
                 Y? OR DETECT?) AND FLUORESC? AND (COMBINATOR? OR LIBRAR? OR
                 PROBE)
L51            9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L45 AND MIXTUR?(5A)(PROTEIN
                 OR PROTEOM?)

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L51  ANSWER 1 OF 9  HCAPLUS  COPYRIGHT 2003 ACS
ACCESSION NUMBER:        2003:187663  HCAPLUS
TITLE:                   Peptidomics: A new approach to affinity protein
                         microarrays
AUTHOR(S):               Scrivener, Elaine; Barry, Richard; Platt, Albert;
                         Calvert, Robert; Masih, George; Hextall, Patrick;
                         Soloviev, Mikhail; Terrett, Jonathan
CORPORATE SOURCE:        Oxford GlycoSciences, Abingdon, UK
SOURCE:                  Proteomics (2003), 3(2), 122-128
                         CODEN: PROTC7; ISSN: 1615-9853
PUBLISHER:               Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE:           Journal
LANGUAGE:                English
AB   Protein microarrays for diagnostic and proteomic
     analyses are being developed using a no. of different techniques
     for each of the steps required including immobilization methods, assay and
     detection systems.  This is extremely different to the development of DNA
     microarrays which is now a well established technol. that has demonstrated
     the capabilities of transcriptomics to deliver validated differential
     transcripts.  As mRNA and protein levels do not always correlate, protein
     microarrays would seem to be an obvious successor to DNA arrays.  Unlike
     nucleic acids, however, protein targets are typically nonhomogeneous in
     physicochem. properties and affinity capture agents are often poorly
     characterised making the expts. difficult to perfect and reproduce.
     Moreover, running multiple affinity assays in parallel (multiplexing) is
     compromised by the heterogeneity of antibody affinities to their protein
     targets.  In the peptidomic approach presented here the assayed
     mixt. of proteins is enzymically digested prior to
     affinity capture to form a mixt. of short peptides that are more similar
     in their physicochem. properties than intact proteins.  These peptides can
     be predicted by in silico digestion of individual proteins, e.g. from
     protein databases allowing design of nonhomologous reagents for the
     screening of affinity agent libraries.  The use of mass
     spectrometry (e.g. matrix-assisted laser desorption/ionization-time of
     flight mass spectrometry) for a direct confirmation of the identity of the
     species captured, provides a further advantage compared to the more usual
     method of detection in which fluorescently labeled captured
     species are scanned to give a spatially resolved image of the array.
CC   9 (Biochemical Methods)

L51  ANSWER 2 OF 9  HCAPLUS  COPYRIGHT 2003 ACS
ACCESSION NUMBER:        2003:113698  HCAPLUS
TITLE:                   Affinity Analysis of a Protein
                         -Aptamer Complex Using Nonequilibrium Capillary
                         Electrophoresis of Equilibrium Mixtures
AUTHOR(S):               Berezovski, Maxim; Nutiu, Razvan; Li, Yingfu; Krylov,
```

Sergey N.
CORPORATE SOURCE: Department of Chemistry, York University, Toronto, ON, M3J 1P3, Can.
SOURCE: Analytical Chemistry (2003), 75(6), 1382-1386
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We propose a new method that allows the use of low-affinity aptamers as affinity **probes** in quant. **analyses** of **proteins**. The method is based on nonequil. capillary electrophoresis of the equil. **mixt.** (NECEEM) of a **protein** with its **fluorescently** labeled aptamer. In general, NECEEM of a protein with a **fluorescently** labeled aptamer generates an electropherogram with three characteristic features: two peaks and an exponential curve. Two peaks correspond to (i) the equil. amt. of free aptamer in the equil. mixt. and (ii) the amt. of the protein-aptamer complex that remains intact at the time of detection. The exponential part is ascribed to the complex decaying during sepn. under nonequil. conditions. Simple anal. of the three features in expts. with known concns. of the protein can be used for the detn. of the equil. dissocn. const., Kd, of the aptamer-protein complex. Similar anal. of the three features in the expt. with unknown concn. of the protein and known Kd value allows the detn. of the protein concn. In this proof-of-principle work, the NECEEM method was applied to the anal. of thrombin using a **fluorescein**-labeled aptamer under the conditions at which the protein-aptamer complex completely decayed during the sepn. We demonstrated that, despite the decay, as few as 4 .times. 106 mols. of the **protein** could be **detected** with NECEEM without sacrificing the accuracy. This sensitivity is comparable with that reported by others for the aptamer-based equil. method. Thus, the proposed NECEEM-based method allows the use of aptamers for highly sensitive affinity **anal.** of **proteins** even when protein-aptamer complexes are unstable.

CC 9 (Biochemical Methods)
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2003:58701 HCAPLUS
DOCUMENT NUMBER: 138:119557
TITLE: Peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**
INVENTOR(S): Charych, Deborah; Beausoleil, Eric; Zuckermann, Ronald N.
PATENT ASSIGNEE(S): Chiron Corporation, USA
SOURCE: U.S. Pat. Appl. Publ., 32 pp., Cont.-in-part of U.S. Pat. Appl. 2002 55,125.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

US 2003017508	A1	20030123	US 2002-190308	20020703
US 2002055125	A1	20020509	US 2001-874091	20010604

PRIORITY APPLN. INFO.: US 2000-209711P P 20000605
US 2001-874091 A2 20010604

AB Provided are peptidomimetic protein-binding arrays, their manuf., use, and application. The protein-binding array elements of the invention include a peptidomimetic segment linked to a solid support via a stable anchor. The invention contemplates peptidomimetic array element **library** synthesis, distribution, and spotting of array elements onto solid planar substrates, labeling of complex **protein mixts.**, and the **anal.** of differential **protein** binding to the array. The invention also enables the enrichment or purifn., and subsequent sequencing or structural **anal.** of **proteins** that are identified as differential by the array screen. Kits including proteomic microarrays in accordance with the present invention are also provided. Slides were prepd. with a reflective aluminum coating that was further overcoated with a thin silicon dioxide dielec., followed by APTES. The Al/SiO2 substrate amplified the signal from Cy3/Cy5 tagged cDNA by approx. 10-40 fold relative to the corresponding glass substrate.

IC ICM G01N033-53
ICS G01N033-542; C12M001-34

NCL 435007900; 435287200

CC 9-1 (Biochemical Methods)
Section cross-reference(s): 3

ST peptidomimetic protein microarray mirrored substrate **proteomic analysis**; reflective aluminum silica APTES microarray

IT Proteins
RL: ARU (Analytical role, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(A, biotinylated, immobilized on avidin coated slide; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Proteins
RL: ARU (Analytical role, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(G, biotinylated, immobilized on avidin coated slide; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Organic compounds, uses
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(aliph., C2-C100, as linker between anchoring and peptidomimetic segments on array; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**
)

IT Silanes
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(amino, silicon dioxide modified with; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Thiols (organic), uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(as anchoring agent; peptidomimetic protein-binding microarrays on

mirrored substrates for performing **proteomic analyses**
)

IT Avidins
RL: ARU (Analytical role, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(as coating on aluminum slides; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(as linker or blocking agent on array; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Polymers, **analysis**
RL: ARU (Analytical role, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(blocking agents; peptidomimetic **protein**-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Electric insulators
(coatings, modified, on reflective metal on glass substrate; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT cDNA
RL: ANT (Analyte); ANST (Analytical study)
(**fluorescently**-labeled; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(ligand-binding, peptidomimetic protein-binding, microarrays; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Peptides, uses
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(oligopeptides, as linker between anchoring and peptidomimetic segments on array; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT DNA microarray technology
Glass substrates
Immobilization, molecular
Peptidomimetics
Protein microarray technology
(peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Proteome
RL: ANT (Analyte); BSU (Biological study, unclassified); PUR (Purification or recovery); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)
(peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT mRNA
RL: ARG (Analytical reagent use); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Proteins
RL: ANT (Analyte); BSU (Biological study, unclassified); PUR (Purification or recovery); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)
(peptidomimetic; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Peptide **library**
(peptoid; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Peptides, **analysis**
RL: ANT (Analyte); BSU (Biological study, unclassified); PUR (Purification or recovery); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)
(peptoids, peptidomimetic; peptidomimetic **protein**-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Metals, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(reflective, modified dielec. coating on; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT Amines, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(silyl, silicon dioxide modified with; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT 6382-82-7
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(aluminum slides coated with silicon oxide and layer of; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT 541-59-3, Maleimide
RL: DEV (Device component use); PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(aminosilane functionalized with; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT 89889-52-1
RL: DEV (Device component use); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(aminosilane-coated aluminum slides coating with; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT 7631-86-9, Silicon dioxide, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(aminosilane-modified, as coating on reflective metal on glass

substrate; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT 9013-20-1, Streptavidin 157885-16-0, Neutravidin
RL: ARU (Analytical role, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(as coating on aluminum slides; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT 919-30-2, APTES
RL: DEV (Device component use); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(as coating on reflective aluminum slides; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT 25322-68-3, Polyethylene oxide
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(as linker or blocking agent on array; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT 439084-54-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(gold-coated microscope slides modification with; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT 64987-85-5, SMCC
RL: RCT (Reactant); RACT (Reactant or reagent)
(in modification of gold-coated slides; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT 58-85-5D, Biotin, conjugates with peptides or peptoids, immobilized on coated aluminum slides
RL: ARG (Analytical reagent use); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT 146368-14-1, Cy5 146368-16-3, Cy3
RL: RCT (Reactant); RACT (Reactant or reagent)
(proteins reaction with; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**
)

IT 7429-90-5, Aluminum, uses 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-32-6, Titanium, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(reflective, modified dielec. coating on; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**)

IT 221216-83-7
RL: PRP (Properties)
(unclaimed sequence; peptidomimetic protein-binding microarrays on mirrored substrates for performing **proteomic analyses**
)

L51 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:814272 HCAPLUS
DOCUMENT NUMBER: 137:291270
TITLE: Methods of **analysis** and labeling of **protein**-protein interactions
INVENTOR(S): Nollau, Peter; Mayer, Bruce J.
PATENT ASSIGNEE(S): Children's Medical Center Corporation, USA
SOURCE: PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002083846	A2	20021024	WO 2002-US11272	20020410
WO 2002083846	A3	20021212		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2001-282748P P 20010410

AB We have discovered a new method to analyze and characterize complex cell signaling networks. The method is based on specific binding of protein-protein interaction modules to a single type of **protein** or a **mixt.** of **proteins.** The method utilizes a no. of different protein-protein interaction domains as **probes** or sensors for the signaling state of the system under investigation. Glutathione-horseradish peroxidase conjugate was used to label fusion proteins of glutathione-S-transferase and protein-protein interaction domains. The labeled domains were applied to membranes on which lysates of 3T3 cells and v-abl transformed 3T3 cells were transferred. Signals were detected by chemiluminescence. Different patterns of tyrosine phosphorylated binding sites were detectable in different types of human leukemia when abl-SH2 or crk-SH2 were used as **probes** for the **detection** of **protein-protein** interactions.

IC ICM C12N
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 6, 7, 14
IT Animal cell line
(3T3; methods of **anal.** and labeling of **protein**-protein interactions)
IT Protein motifs
(EH domain; methods of **anal.** and labeling of **protein**-protein interactions)
IT Protein motifs
(EVH1 domain; methods of **anal.** and labeling of **protein**-protein interactions)
IT Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);

ANST (Analytical study); BIOL (Biological study); USES (Uses)
(Grb-2, SH2 of, patterns of tyrosine phosphorylation in relation to; methods of **anal.** and labeling of **protein**-protein interactions)

IT Protein motifs
(LIM domain; methods of **anal.** and labeling of **protein**-protein interactions)

IT Protein motifs
(PDZ domain; methods of **anal.** and labeling of **protein**-protein interactions)

IT Protein motifs
(PTB domain; methods of **anal.** and labeling of **protein**-protein interactions)

IT Protein motifs
(RING finger; methods of **anal.** and labeling of **protein**-protein interactions)

IT Protein motifs
(SAM domain; methods of **anal.** and labeling of **protein**-protein interactions)

IT Protein motifs
(SH2 domain; methods of **anal.** and labeling of **protein**-protein interactions)

IT GTPase-activating protein
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(SH2 of, patterns of tyrosine phosphorylation in relation to; methods of **anal.** and labeling of **protein**-protein interactions)

IT Protein motifs
(SH3 domain; methods of **anal.** and labeling of **protein**-protein interactions)

IT Protein motifs
(TPR domain; methods of **anal.** and labeling of **protein**-protein interactions)

IT Protein motifs
(WD40 repeat; methods of **anal.** and labeling of **protein**-protein interactions)

IT Protein motifs
(WW domain; methods of **anal.** and labeling of **protein**-protein interactions)

IT Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(abl, SH2 of, different patterns of tyrosine phosphorylated binding sites in human leukemia in relation to; methods of **anal.** and labeling of **protein**-protein interactions)

IT Biological materials
(anal. of; methods of **anal.** and labeling of **protein**-protein interactions)

IT Nucleic acids
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(analogs, as label; methods of **anal.** and labeling of **protein**-protein interactions)

IT Protein motifs
(ankyrin repeat; methods of **anal.** and labeling of **protein**-protein interactions)

IT Protein motifs

(armadillo repeat; methods of **anal.** and labeling of **protein**-protein interactions)
IT Oligodeoxyribonucleotides
Oligonucleotides
Peptide nucleic acids
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as label; methods of **anal.** and labeling of **protein**-protein interactions)
IT Membranes, nonbiological
(as support for **protein** immobilization; methods of **anal.** and labeling of **protein**-protein interactions)
IT Plastics, reactions
RL: DEV (Device component use); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(as support for **protein** immobilization; methods of **anal.** and labeling of **protein**-protein interactions)
IT Particles
(beads, as support for **protein** immobilization; methods of **anal.** and labeling of **protein**-protein interactions)
IT Analysis
(biochem., multiplex binding assay; methods of **anal.** and labeling of **protein**-protein interactions)
IT Proteins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(conjugates, with oligonucleotides; methods of **anal.** and labeling of **protein**-protein interactions)
IT Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(crk, SH2 of, different patterns of tyrosine phosphorylated binding sites in human leukemia in relation to; methods of **anal.** and labeling of **protein**-protein interactions)
IT Oligonucleotides
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(derivs., thioesters, as label; methods of **anal.** and labeling of **protein**-protein interactions)
IT **Fluorescent** substances
(fluor; methods of **anal.** and labeling of **protein**-protein interactions)
IT Immunoassay
(immunoblotting; methods of **anal.** and labeling of **protein**-protein interactions)
IT **Proteins**
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(labeled; methods of **anal.** and labeling of **protein**-protein interactions)
IT Cell
Fluorescent substances
Human
Immobilization, molecular
Leukemia
Molecular association
PCR (polymerase chain reaction)
Protein motifs
Signal transduction, biological
(methods of **anal.** and labeling of **protein**-protein

interactions)
IT Antibodies
Fusion proteins (chimeric **proteins**)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(methods of **anal.** and labeling of **protein**-protein interactions)
IT **Proteins**
RL: BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)
(methods of **anal.** and labeling of **protein**-protein interactions)
IT Phosphorylation, biological
(**protein**; methods of **anal.** and labeling of **protein**-protein interactions)
IT Gene, microbial
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(v-abl, 3T3 cells transformed with; methods of **anal.** and labeling of **protein**-protein interactions)
IT Protein motifs
(zinc finger; methods of **anal.** and labeling of **protein**-protein interactions)
IT 58-85-5, Biotin 50812-37-8, Glutathione-S-transferase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as label; methods of **anal.** and labeling of **protein**-protein interactions)
IT 9012-36-6D, Sepharose, conjugates with glutathione
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(beads; methods of **anal.** and labeling of **protein**-protein interactions)
IT 50812-37-8D, Glutathione-S-transferase, fusion **proteins**
RL: ANT (Analyte); ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(methods of **anal.** and labeling of **protein**-protein interactions)
IT 9003-99-0D, Peroxidase, conjugates with glutathione
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(methods of **anal.** and labeling of **protein**-protein interactions)
IT 70-18-8DP, Glutathione, conjugates
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(methods of **anal.** and labeling of **protein**-protein interactions)
IT 58-54-8, Ethacrynic acid 70-18-8, Glutathione, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(methods of **anal.** and labeling of **protein**-protein interactions)
IT 60-18-4, Tyrosine, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(phosphorylated binding sites, different patterns of; methods of **anal.** and labeling of **protein**-protein interactions)

L51 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:696250 HCAPLUS
DOCUMENT NUMBER: 137:228958
TITLE: Protein profiling platform
INVENTOR(S): Petricelli, Matthew
PATENT ASSIGNEE(S): Activx Biosciences, Inc., USA
SOURCE: PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002071066	A1	20020912	WO 2002-US6234	20020301
US 2002182651	A1	20021205	US 2002-87602	20020301

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2001-273007P P 20010302

AB The invention concerns methods and compns. are described for **analyzing** complex **protein mixts.**, such as **proteomes**, using activity-based **probes**. In particular, **probes** that specifically react with and bind to the active form of one or more target proteins are employed. Labeled peptides obtained from the labeled active target proteins can be used in screening and identification procedures, and can be related to the identity, presence, amt., or activity of active members of the desired target protein class. The methods and compns. described herein can be used, for example, to provide diagnostic information concerning pathogenic states, in identifying proteins that may act as therapeutic targets, and in drug discovery.

IC ICM G01N033-53
ICS G01N033-543
CC 9-16 (Biochemical Methods)
Section cross-reference(s): 1
IT Capillary electrophoresis
Denaturants
Diagnosis
Diffusion
Drug screening
Electrophoresis
Electrospray ionization mass spectrometry
Fluorescent substances
Gel electrophoresis
HPLC
Labels
Liquid chromatography
Mass spectrometry

Protein degradation
Test kits
Washing
(protein profiling platform)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:615942 HCAPLUS
DOCUMENT NUMBER: 137:165832
TITLE: Activity based **probe** analysis
INVENTOR(S): Patricelli, Matthew P.
PATENT ASSIGNEE(S): Activx Biosciences, Inc., USA
SOURCE: PCT Int. Appl., 62 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002063271	A2	20020815	WO 2002-US3808	20020205
WO 2002063271	C1	20021024		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2001-266687P P 20010205
OTHER SOURCE(S): MARPAT 137:165832
AB The invention concerns methods and compns. are described for **analyzing** complex **protein mixts.** using **fluorescent** activity-based **probes.** In particular, **probes** that specifically react with and bind to the active form of one or more target proteins are employed. **Fluorescent** signals obtained from the labeled active target proteins can be related to the presence or amt. of active members of the desired target protein class. The methods and compns. described herein can be used, for example, to provide diagnostic information concerning pathogenic states, in identifying proteins that may act as therapeutic targets, and in drug discovery.
IC ICM G01N
CC 9-14 (Biochemical Methods)
Section cross-reference(s): 1, 14
ST protein sepn electrophoresis synthesis **fluorescent probe** drug screening
IT Electrophoresis
(SDS-PAGE; activity based **probe** anal.)
IT Capillary electrophoresis
Cyanine dyes
Diagnosis

Diffusion
Drug screening
Dyes
Electrophoresis apparatus
Fluorescent substances
Fluorometry
Functional groups
Gel electrophoresis
Labels
Mass spectrometry
Pathogen
Separation
(activity based **probe** anal.)

IT Receptors
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(activity based **probe** anal.)

IT **Proteome**
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(activity based **probe anal.**)

IT Functional groups
(acylating; activity based **probe** anal.)

IT Functional groups
(aldehyde; activity based **probe** anal.)

IT Functional groups
(alkylating; activity based **probe** anal.)

IT Rare earth metals, uses
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(cryptate derivs.; activity based **probe** anal.)

IT Functional groups
(epoxide; activity based **probe** anal.)

IT Functional groups
(ketone; activity based **probe** anal.)

IT Dyes
(metal chelate; activity based **probe** anal.)

IT **Proteins**
RL: ANT (Analyte); BSU (Biological study, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study)
(**mixt.**; activity based **probe** anal.)

IT Dyes
(naphthylamine; activity based **probe** anal.)

IT Reagents
RL: NUU (Other use, unclassified); USES (Uses)
(noncovalent; activity based **probe** anal.)

IT Functional groups
(phosphoryl; activity based **probe** anal.)

IT Functional groups
(sulfonyl; activity based **probe** anal.)

IT 13558-31-1 98181-63-6
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(activity based **probe** anal.)

IT 91-64-5, Coumarin 92-83-1, Xanthene 7440-18-8D, Ruthenium, chelates 7440-27-9D, Terbium, chelates 7440-52-0D, Erbium, chelates 25168-10-9, Naphthylamine 138026-71-8, BODIPY
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical

study); USES (Uses)
(activity based **probe** anal.)

IT 446828-34-8P 446828-36-0P 446850-41-5P 446850-43-7P 446850-45-9P 446850-47-1P
RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(activity based **probe** anal.)

IT 189200-71-3DP, Rhodamine green, reaction with adenosine derivs. 446833-62-1P 446833-64-3P 446850-50-6P 446850-53-9P 446850-55-1DP, reaction with rhodamine green 446850-58-4P 446850-61-9P 446850-64-2P 446850-67-5P 446850-69-7DP, reaction with rhodamine green 446850-71-1P 446850-73-3P 446850-76-6P 446850-79-9P 446850-81-3P
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(activity based **probe** anal.)

IT 112-47-0, 1,10-Decanediol 112-60-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(activity based **probe** anal.)

IT 134179-40-1P 338964-01-5P 338964-02-6P 338964-03-7P 338964-04-8P 338964-05-9P 338964-06-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(activity based **probe** anal.)

L51 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:564598 HCAPLUS
TITLE: Proteomic profiling of mechanistically distinct enzyme classes using a common chemotype
AUTHOR(S): Adam, Gregory C.; Sorensen, Erik J.; Cravatt, Benjamin F.
CORPORATE SOURCE: The Skaggs Institute for Chemical Biology and Department of Chemistry, The Scripps Research Institute, La Jolla, CA, 92037, USA
SOURCE: Nature Biotechnology (2002), 20(8), 805-809
CODEN: NABIF9; ISSN: 1087-0156
PUBLISHER: Nature Publishing Group
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Proteomics research requires methods to characterize the expression and function of **proteins** in complex **mixts.** Toward this end, chem. **probes** that incorporate known affinity labeling agents have facilitated the activity-based profiling of certain enzyme families. To accelerate the discovery of proteomics **probes** for enzyme classes lacking cognate affinity labels, we describe here a **combinatorial** strategy. Members of a **probe library** bearing a sulfonate ester chemotype were screened against complex proteomes for activity-dependent protein reactivity, resulting in the labeling of at least six mechanistically distinct enzyme classes. Surprisingly, none of these enzymes represented targets of previously described proteomics **probes.** The sulfonate **library** was used to identify an omega-class glutathione S-transferase whose activity was upregulated in invasive human breast cancer lines. These results indicate that activity-based **probes** compatible with whole-**proteome anal.** can be developed for numerous enzyme classes and applied to identify enzymes assocd. with discrete pathol. states.

CC 7-1 (Enzymes)
Section cross-reference(s): 6, 13, 9, 14
ST proteome protein enzyme profile **fluorescent probe**
IT **Fluorescent** indicators
Human
(proteomic profiling of mechanistically distinct enzyme classes using a common chemotype)
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1993:142804 HCAPLUS
DOCUMENT NUMBER: 118:142804
TITLE: **Analysis** of a recombinant **protein** preparation on physical homogeneity and state of aggregation
AUTHOR(S): Brochon, J. C.; Tauc, P.; Merola, F.; Schoot, B. M.
CORPORATE SOURCE: LURE, Cent. Univ. Paris-Sud, Orsay, F91405, Fr.
SOURCE: Analytical Chemistry (1993), 65(8), 1028-34
CODEN: ANCHAM; ISSN: 0003-2700
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The homogeneity of a recombinant protein prepn. and the state of aggregation were studied by time-resolved polarized fluorometry. From the rotational correlation time .theta. distribution pattern, the state of aggregation of a protein in soln. in deduced. This distribution is detd. from a 2-dimensional (.tau.,.theta.) fit using the max. entropy method of data anal. and where .tau. values are the **fluorescence** lifetimes. An anal. procedure is developed that is validated by measurements on a **mixt.** of 2 **proteins** having different mol. wts. and contg. a single tryptophan residue per polypeptide chain: recombinant human interferon .gamma., r-hu IFN .gamma. (RU42369) of Mr 17,000 for the monomer and recombinant mutant W201Y lac operon repressor tetramer, Mr 152,400. By spiking a soln. of 1 mg/mL r-hu IFN .gamma. with the W201Y lac operon repressor, the lower level of detection of higher mol. wt. component is found to be 5% in intrinsic **fluorescent probe** concn. In this study it was found that (1) purified r-hu IFN .gamma. in soln. after lyophilization is a dimeric mol., without indication of phys. heterogeneity and without high-mol.-wt. aggregates; (2) heat treatment of lyophilized r-hu IFN .gamma., 14 days at 40.degree., results in the formation of a detectable amt. of higher-mol.-wt. material; (3) the dissocn. of the dimer r-hu IFN .gamma. on diln. was not detectable after diln. to 0.01 mg/mL (0.57 .mu.M). Taking advantage of the great sensitivity of a **fluorescence** technique and of the capabilities of the data anal. MEM, this new procedure can be widely used to detect a high-mol.-wt. protein contaminant (aggregates) in a homogeneous protein soln.
CC 9-5 (Biochemical Methods)
Section cross-reference(s): 16
ST recombinant protein aggregation homogeneity detn; fluorometry recombinant **protein analysis**
IT Homogeneity
Molecular association
(of recombinant **proteins**, fluorometric **anal.** of)

L51 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1991:531404 HCAPLUS

DOCUMENT NUMBER: 115:131404
TITLE: Luminescent enzyme assay methods and kits for detecting a substance using enzymically-induced decomposition of dioxetanes
INVENTOR(S): Bronstein, Irena Y.
PATENT ASSIGNEE(S): Tropix, Inc., USA
SOURCE: U.S., 30 pp. Cont.-in-part of U.S. Ser. No. 265,406, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 16
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4978614	A	19901218	US 1989-382125	19890720
CA 2033331	AA	19910121	CA 1990-2033331	19900717
WO 9101492	A1	19910207	WO 1990-US3920	19900717
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, IT, LU, NL, SE				
EP 435998	A1	19910710	EP 1990-911242	19900717
EP 435998	B1	19991110		
R: DE, FR, GB, IT				
EP 859062	A2	19980819	EP 1998-101157	19900717
R: DE, FR, GB, IT				
EP 907082	A2	19990407	EP 1998-122597	19900717
R: DE, FR, GB, IT				
US 5220005	A	19930615	US 1990-574787	19900830
JP 04124186	A2	19920424	JP 1990-239765	19900910
JP 2999810	B2	20000117		
US 5605795	A	19970225	US 1994-255795	19940607
US 5856522	A	19990105	US 1997-882330	19970625
US 36536	E	20000125	US 1997-958342	19971027

PRIORITY APPLN. INFO.:

US 1988-265406	B2	19881026
US 1983-889823	A2	19830724
US 1986-889823	A2	19860724
US 1989-382125	A	19890720
EP 1990-911242	A3	19900717
WO 1990-US3920	W	19900717
US 1990-574787	A3	19900830
US 1992-990800	B1	19921215
US 1995-433996	A1	19950504

OTHER SOURCE(S): MARPAT 115:131404

AB Luminescent enzyme assays and kits are described that use an enzyme and dioxetane I (T = cycloalkyl or polycycloalkyl group bonded by a spiro linkage; Y = **fluorescent** chromophore; X = H, alkyl, aryl, aralkyl, heteroalkyl, heteroaryl, cycloalkyl, cycloheteroalkyl, or enzyme-cleavable group; Z = H, enzyme-cleavable group; .gtoreq.1 of X and Z must be an enzyme-cleavable group) so that the enzyme cleaves the enzyme-cleavable group from the dioxetane to form a neg.-charged substituent bonded to the dioxetane. The neg.-charged substituent causes the dioxetane to decomp. to form a luminescent substance comprising group Y. Human chorionic gonadotropin (hCG) was detd. in blood and urine by chemiluminescence immunoassay using 3-(2'-spiroadamantane)-4-methoxy-4-(3''-phosphoryloxy)phenyl-1,2-dioxetane, di-Na salt (AMPPD) as a substrate, alk. phosphatase conjugated with anti-hCG antibody, and beads

coated with anti-hCG. Samples were read in a luminometer. The assay was >10 times as sensitive as a colorimetric assay using p-nitrophenylphosphoric acid as a substrate. In an assay for alk. phosphatase using AMPPD, the min. detectable concn. of alk. phosphatase was 1.67 .times. 10-15M.

IC ICM G01N021-76
ICS G01N033-53

NCL 435021000

CC 9-5 (Biochemical Methods)
Section cross-reference(s): 2, 7

IT Antibodies
Antigens
Proteins, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, by luminescence enzyme immunoassay, dioxetane substrate in)

IT Enzymes
RL: ANST (Analytical study)
(conjugates, with antibody or hybridization **probe**-linkable agent, in enzyme luminescence assays with dioxetane substrate)

IT Albumins, compounds
RL: ANST (Analytical study)
(conjugates, with **fluorescein**, alk. phosphatase luminescence assay with dioxetane substrate response to)

IT 2321-07-5D, **mixts**. with polymeric quaternary ammonium salts
9017-80-5, Poly(vinylbenzyltrimethylammonium chloride) 135781-06-5
135781-07-6 135781-08-7
RL: ANST (Analytical study)
(**protein** luminescence enzyme assay with dioxetane substrate enhancement with)